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**THE AMERICAN
YEAR BOOK**

THE AMERICAN YEAR BOOK

A Record of Events and Progress

YEAR 1941

EDITOR

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A SUPERVISORY BOARD REPRESENT-
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PREFACE

Within a quarter century the United States again finds itself involved in a world conflict as a belligerent. In a review of the year 1941, such as this issue of *THE AMERICAN YEAR BOOK* presents, the mind is impressed more than ordinarily by the inevitability of the march of events toward this country's all-out alliance with the United Nations in their struggle against the Axis Powers. The record is given factually with such interpretation as the incontrovertible facts may justify. There has been no attempt to minimize the dangers confronting us in this war nor to avoid a realistic approach to the hardships we must endure if we are to make a full contribution to ultimate victory. A careful, thoughtful perusal of this volume must convince the reader that the world-wide clash of nations has significance far transcending the interests of any one nation.

The world is divided into two camps; the cleavage is ideological, and the two ideologies—forward-looking Democracy and backward-looking Nationalism—can not be reconciled, can not live permanently together on a planet which is being progressively integrated by every means of communication. If the present struggle is to be read in the light of these observations, it will at once be understood that there is no room for complacency in either camp. It will likewise be apparent that the maximum economic strain must be prolonged for the duration of the conflict and probably for a considerable period after peace comes. The record of the year 1941 is, therefore, a record of the greatest historical importance, and the purpose of this volume is not only to make that record available to the public for the satisfying of its immediate concern but to present the record in such form as to be of most convenient use to the historian and research worker of the future as well as to the publicist and the teacher of the present.



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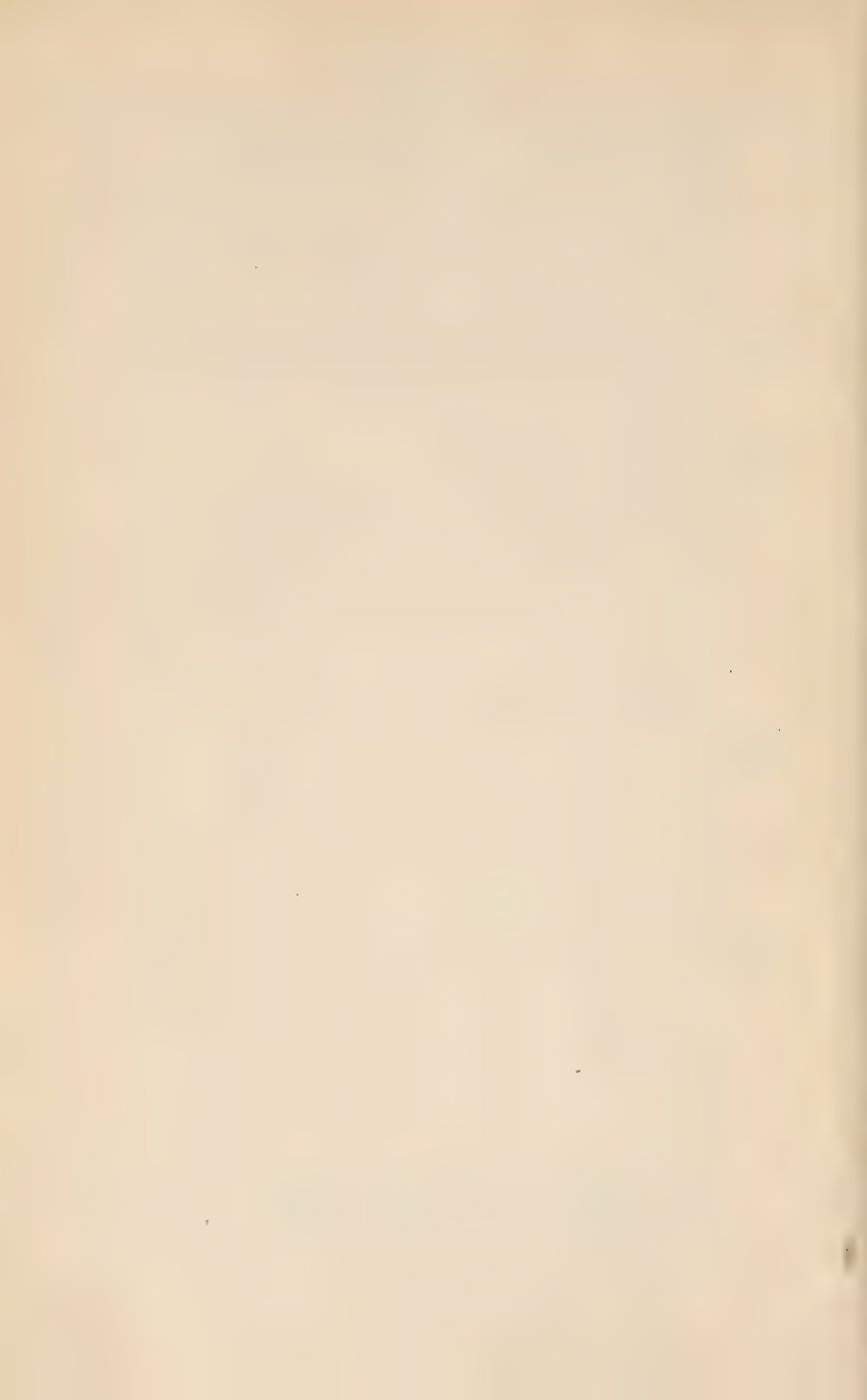
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**THE AMERICAN
YEAR BOOK**



THE AMERICAN YEAR BOOK

A RECORD OF EVENTS AND PROGRESS

PART ONE HISTORICAL

DIVISION I AMERICAN POLITICAL HISTORY

THE PRESIDENT AND HIS POLICIES

BY EVERETT S. BROWN
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FOREIGN POLICY

Foreign policy, culminating in declarations of a state of war between the United States and the Axis Powers, dominated the activities of the Roosevelt Administration throughout 1941. The significance of this country's foreign relations was stressed by President Roosevelt, beginning with his message to Congress on Jan. 6, when he asserted that the future and the safety of our country and of our democracy were overwhelmingly involved in events far beyond our borders. "The need of the moment," he continued, "is that our actions and our policy should be devoted primarily—almost exclusively—to meeting this foreign peril. For all our domestic problems are now a part of the great emergency."

The basic principles of our national policy, according to the President, were a commitment to all-inclusive national defense; full support of all peoples resisting aggression; and re-

fusal to acquiesce in a peace dictated by aggressors and sponsored by appeasers. The immediate need was a swift and driving increase in armament production. In this same message President Roosevelt, in looking to the future, pronounced his doctrine of the four essential human freedoms: freedom of speech and expression; freedom of religious worship; freedom from want; and freedom from fear, through a worldwide reduction of armaments.

So, too, the budget, presented to Congress on Jan. 8, 1941 was, in the President's words, "a reflection of a world at war." The Government, he declared, had embarked on a program for the total defense of our democracy. Practical application of his policy of aid against aggressor nations was made in his presenting to Congress, on Jan. 10, the text of the Lease-Lend Bill (see "Lease-Lend Law," p. 38), and in his use of the powers granted to him by that law.

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LEASING OF SITES FOR MILITARY BASES

Declaring that "these bases are for American defense against attack," President Roosevelt, on March 27, 1941 transmitted to Congress the agreement signed in London leasing sites for naval and air bases on Newfoundland, Bermuda, and West Indian islands for 99 years to the United States, in exchange for destroyers traded to Great Britain at an earlier date. The lease of these bases was regarded as helping the United States to insure herself against dangers which threatened her safety as well as the safety of the British Empire. Closely associated with this policy was the signing by the President of a resolution adopted by Congress, binding the United States to oppose any transfer of sovereignty of foreign possessions in the Western Hemisphere. Presidential action on April 10, making Greenland a protectorate of the United States until such time as Denmark could again exercise her sovereignty, was cited as a case in point.

UNLIMITED NATIONAL EMERGENCY

On May 27, speaking from the White House in the presence of the governing board of the Pan-American Union and the Canadian minister, President Roosevelt broadcast his foreign policy, and announced the issuance of a proclamation of an unlimited national emergency. The President warned that, unless the advance of Hitlerism was forcibly checked, the Western Hemisphere was in grave danger. Referring to the Lease-Lend Act he said that our whole program of aid for the democracies had been based on hard-headed concern for our own security. He stressed the importance of maintaining control of the seas, and pointed to the danger to the Americas if the Axis Powers should occupy Greenland or the islands of the Atlantic. Although our policy was one of defense, it would be stupid to wait until a probable enemy had gained a foothold from which to attack. Ac-

cordingly, the President said, we had extended our patrol in North and South Atlantic waters and would resist every attempt of Hitler to extend his Nazi domination to the Western Hemisphere or to gain control of the sea. Another point in our foreign policy was to insure delivery of needed supplies to Britain and to all who were resisting Hitlerism.

Expressing the opinion that "indifference on the part of the United States to the increasing menace would be perilous, and common prudence requires that for the security of this Nation and of this Hemisphere we should pass from peacetime authorizations of military strength to such a basis as will enable us to cope instantly and decisively with any attempt at hostile encirclement of this Hemisphere, or the establishment of any base for aggression against it, as well as to repel the threat of predatory incursion by foreign agents into our territory and society," the President proclaimed the existence of an unlimited national emergency requiring that all military, naval, air and civilian bases be put on the basis of readiness to repel all acts of aggression directed toward any part of the Western Hemisphere. He called upon "all loyal citizens to place the Nation's needs first in mind and in action to the end that we may mobilize and have ready for instant defensive use all of the physical powers, all of the moral strength and all of the material resources of this nation."

CLOSING OF GERMAN CONSULATES

The President's policy toward Germany took the form of freezing German and Italian assets in the United States, as well as those of European countries occupied or dominated by the Axis partners. He followed this action by ordering, on June 16, the closing of all German consulates in the United States and its possessions, the German Library of Information in New York, the German Railway and Tourist Agencies and the Trans-Ocean News Service. He charged that these agencies had been engaged in

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activities of an improper and unwarranted character which rendered their continued presence in the United States inimical to the welfare of this country.

OCCUPATION OF ICELAND

On July 7, President Roosevelt, in a message to Congress, announced that in accordance with an understanding with the Prime Minister of Iceland, American forces had arrived in Iceland. He said that the United States could not permit the occupation by Germany of strategic outposts in the Atlantic to be used as air or naval bases for eventual attack against the Western Hemisphere. He added that, as commander-in-chief, he had issued orders to the navy to take all necessary steps to insure the safety of communications between Iceland and the United States and also on the seas between the United States and all other strategic outposts.

ROOSEVELT-CHURCHILL ATLANTIC CONFERENCE

In August President Roosevelt and Prime Minister Winston Churchill held several important conferences at sea. An official statement was issued from the White House on Aug. 14 disclosing the fact that the two men had examined the whole problem of the supply of munitions of war under the provisions of the Lease-Lend Act for the armed forces of the United States and for all countries actually engaged in resisting aggression. The principles outlined in the Atlantic Charter were opposition to aggrandizement by any country, or to territorial changes not freely accepted by the peoples concerned; respect for the right of peoples to choose their own form of government; free access by all countries on equal terms to trade and raw materials; international collaboration to improve labor standards, economic advancement and social security; free use of the oceans by all; disarmament of aggressor nations until a wider and more permanent system of general security has been developed.

Commenting on this conference,

President Roosevelt said the declaration of principles presented a goal which was worth while for our type of civilization to seek.

TEXT OF THE ATLANTIC CHARTER

The text of the official statement on the Roosevelt-Churchill meeting, issued at Washington Aug. 14, follows:

"The President of the United States and the Prime Minister, Mr. Churchill, representing His Majesty's Government in the United Kingdom, have met at sea.

"They have been accompanied by officials of their two governments, including high ranking officers of their military, naval and air services.

"The whole problem of the supply of munitions of war, as provided by the Lease-Lend Act, for the armed forces of the United States and for those countries actively engaged in resisting aggression has been further examined.

"Lord Beaverbrook, the Minister of Supply of the British Government, has joined in these conferences. He is going to proceed to Washington to discuss further details with appropriate officials of the United States Government. These conferences will also cover the supply problems of the Soviet Union.

"The President and the Prime Minister have had several conferences. They have considered the dangers to world civilization arising from the policies of military domination by conquest upon which the Hitlerite government of Germany and other governments associated therewith have embarked, and have made clear the steps which their countries are respectively taking for their safety in the face of these dangers.

"They have agreed upon the following joint declaration:

"The President of the United States of America and the Prime Minister, Mr. Churchill, representing His Majesty's Government in the United Kingdom, being met together, deem it right to make known certain common principles in the national policies

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of their respective countries on which they base their hopes for a better future for the world.

"FIRST, their countries seek no aggrandizement, territorial or other;

"SECOND, they desire to see no territorial changes that do not accord with the freely expressed wishes of the peoples concerned;

"THIRD, they respect the right of all peoples to choose the form of government under which they will live; and they wish to see sovereign rights and self-government restored to those who have been forcibly deprived of them;

"FOURTH, they will endeavor, with due respect for their existing obligations, to further the enjoyment by all States, great or small, victor or vanquished, of access, on equal terms, to the trade and to the raw materials of the world which are needed for their economic prosperity;

"FIFTH, they desire to bring about the fullest collaboration between all nations in the economic field with the object of securing, for all, improved labor standards, economic adjustment and social security;

"SIXTH, after the final destruction of the Nazi tyranny, they hope to see established a peace which will afford to all nations the means of dwelling in safety within their own boundaries, and which will afford assurance that all the men in all the lands may live out their lives in freedom from fear and want;

"SEVENTH, such a peace should enable all men to traverse the high seas and oceans without hindrance;

"EIGHTH, they believe that all of the nations of the world, for realistic as well as spiritual reasons, must come to the abandonment of the use of force. Since no future peace can be maintained if land, sea or air armaments continue to be employed by nations which threaten, or may threaten, aggression outside of their frontiers, they believe, pending the establishment of a wider and permanent system of general security, that the disarmament of such nations is essential. They will likewise aid and encourage all other practicable measures

which will lighten for peace-loving peoples the crushing burden of armaments.

FRANKLIN D. ROOSEVELT.
WINSTON S. CHURCHILL."

NEUTRALITY LAW REVISION

On Sept. 11, President Roosevelt announced that the United States destroyer *Greer*, carrying mail to Iceland and flying the American flag, had been attacked by a German submarine. He characterized this attack as piracy, and said it was only one of a number of such attacks which had been made. He declared that the time had come when the Americas must be defended, and toward this end, American planes and naval vessels would no longer wait until Nazi submarines—"the rattlesnakes of the Atlantic"—should strike first but would take every necessary means to protect all merchant vessels engaged in commerce in our defensive waters.

Stating in a message to Congress on Oct. 9 that world conditions had changed greatly since enactment of the Neutrality Act, the President said the Neutrality Act must be revised to meet those conditions. He recommended the immediate repeal of Section 6 of the act of Nov. 4, 1939 which prohibited the arming of American ships engaged in foreign commerce. He also asked that the law be amended to make it possible for American ships to deliver Lease-Lend articles to those in a position to use them; in other words, removing the prohibition against sending American ships into belligerent ports. He declared that the American flag was not going to be driven from the seas by Hitler's submarines, airplanes, or threats, and that "we intend to maintain the policy of protecting the freedom of the seas against domination by any foreign power which has become crazed with a desire to control the world."

On Oct. 25, in a message to the Foreign Policy Association, the President repeated that the inescapable end of our foreign policy was the destruction of the Hitler menace. Two days later, in a Navy Day address, he

asserted that he had in his possession a map which disclosed a Nazi plan to divide South America into five vassal states, and also a document made in Germany providing for the abolition of all existing religions and setting up an international Nazi church, in which *Mein Kampf* would replace the Bible. He said that our determination to resist aggression was expressed in his orders to the Navy to shoot Nazi raiders on sight, and admitted that units of the Navy in the Atlantic patrol were already in action. Evidence of this fact came almost immediately in the report of the sinking of the American destroyer *Reuben James*.

In a letter to Speaker Rayburn and Representative McCormack, majority leader in the House, the President again urged action on the proposed revision of the Neutrality Act. Congress amended the law along the lines requested, and the revised law was signed by the President on Nov. 17.

OCCUPATION OF DUTCH GUIANA

On Nov. 24 it was announced that American soldiers had been dispatched for protective occupation of Dutch Guiana. The move was made in concert with the Brazilian and Netherlands Governments, as a safeguard against danger confronting strategic ore deposits, 60 per cent of the American aluminum supply coming from Dutch Guiana. It was stated that the troops would be withdrawn with the termination of the world crisis. Revelation of the fact that the President had authorized Lease-Lend aid to the Free French forces, and that the Office of Export Control had announced that all general and individual export licenses authorizing any exportations whatever to Algeria, French Morocco, and French Tunisia had been revoked, led to the belief that the occupation of Dutch Guiana was motivated in part, at least, by the desire to erect a barrier to a possible Nazi invasion from French Africa, with Vichy-controlled French Guiana as a base.

POLICY TOWARD SOVIET RUSSIA

In a letter of Aug. 2, our Government, speaking through Sumner Welles, Acting Secretary of State, informed the Soviet ambassador to the United States that it had decided to give all economic assistance practicable to Soviet Russia in its struggle against armed aggression. Harry Hopkins was sent to Moscow to discuss matters with Joseph Stalin, and on his return, President Roosevelt and Prime Minister Winston Churchill sent a joint message to Stalin stating that they were cooperating to provide him with the very maximum of supplies he most urgently needed. They suggested a conference in Moscow for the purpose of ascertaining Russia's needs.

W. Averell Harriman, who went as head of the American delegation to this conference, delivered to Stalin a personal message from President Roosevelt, expressing his confidence that ways would be found to provide the material and supplies necessary to fight Hitler on all fronts. On November 6 the announcement was made that lease-lend aid in the amount of \$1,000,000,000 had been pledged to Soviet Russia by President Roosevelt. This loan, to be used for military equipment, munitions, and raw materials, would bear no interest and was to be repaid over a period of five years after the close of the war. In the meantime the United States planned to acquire essential raw materials from Russia and charge their cost against the Lease-Lend Law. Immediately following this announcement, the President instructed Edward R. Stettinius, Jr., the Lease-Lend Administrator, to arrange as quickly as possible with Soviet officials the transfer of war supplies to Russia. The President said he had formally found the defense of Soviet Russia vital to the defense of the United States, thus putting the lease-lend program into effect with regard to Russia. (See "Lease-Lend Law" p. 41.)

The arrival in December of Maxim Litvinoff as the new Soviet ambassador to the United States was the occasion of the exchange of friendly

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greetings between the governments of the two countries, in the course of which President Roosevelt declared that it was the firm intention of the United States to continue to carry out its program of aid to the Soviet Union in the conduct of the struggle against the forces of aggression.

THE FAR EAST

An explanation of the Administration's policy toward Japan over a period of two years was given by the President on July 24 in the course of some informal remarks to members of the Volunteer Participation Committee. He said that whether the Japanese had had aggressive purposes to enlarge their empire southward, they had no oil of their own. If we had cut off oil from them, they probably would have gone to the Dutch East Indies, with consequent war for the United States. Permitting Japan to have oil had kept war out of the South Pacific. Japan's continued aggressions in the Orient, however, led to a change in our policy. On July 25, President Roosevelt issued an executive order freezing Japanese assets in the United States. All financial and import and export trade transactions in which Japanese interests were involved were brought under the control of the Government. A week later the President redefined our petroleum export policy in such a way that Japan (although not mentioned by name) would be deprived of all further gasoline that could be used for aviation, and placing other petroleum exports to Japan on a pre-war quota basis.

As a means of strengthening the defense of the Philippine Islands, President Roosevelt, by a military order of July 26, called all the organized military forces of the Government of the Commonwealth of the Philippines into the service of the United States for the period of the existing emergency. Another item indicative of the critical situation in the Far East was the order withdrawing United States marines from China. It was feared that they would be in peril of seizure as hostages if hostilities with Japan developed.

WAR WITH JAPAN

Secretary of State Hull entered upon a series of discussions of the Far Eastern question with Ambassador Nomura and with Saburo Kuru, who came from Japan as special envoy. The continual movement of Japanese troops and naval units southward led President Roosevelt to ask Japan curtly what were her intentions in Indo-China. A Japanese reply that her move was due to a threat of attack from China and, furthermore, that the number of her troops sent into Indo-China did not exceed her agreement with the French Vichy Government, failed to satisfy the President. On Dec. 6 he sent a last-minute peace appeal to Emperor Hirohito, but before any reply was forthcoming, a Japanese air force made a sudden attack on Pearl Harbor, Hawaii, on Dec. 7, and plunged the United States and Japan into active war. On Dec. 8, the President addressed a joint session of Congress and briefly reviewed the facts of the attack on Pearl Harbor and other American possessions in the Pacific. Denouncing the "unprovoked and dastardly attack," he asked Congress to declare that a state of war existed between the United States and the Japanese Empire. Congress did so immediately by a vote of 82-to-0 in the Senate and 388-to-1 in the House. On Dec. 15, the President sent to Congress a historical summary of past policy in relation to the Pacific area and events leading up to the Japanese attack. Asserting that we were now fighting in defense of our national existence, he declared that "the people of this country are totally united in their determination to consecrate our national strength and man-power to bring conclusively to an end the pestilence of aggression and force which has long menaced the world and which has now struck deliberately and directly at the safety of the United States."

PRESIDENT'S MESSAGE TO PHILIPPINES

President Roosevelt, in a message of Dec. 28 broadcast directly to the

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Philippine Islands, said in the great struggle of the Pacific "the loyal Americans of the Philippine Islands are called upon to play a crucial role. They have played, and they are playing tonight, their part with greatest gallantry. As President I wish to express to them my feeling of sincere admiration for the fight they are now making. The people of the United States will never forget what the people of the Philippine Islands are doing this day and will do in the days to come. I give to the people of the Philippines my solemn pledge that their freedom will be redeemed and their independence established and protected. . . . We are engaged in a great and common cause. I count on every Philippine man, woman and child to do his duty. We will do ours."

WAR WITH OTHER AXIS POWERS

In a brief message to Congress on Dec. 11, President Roosevelt announced that the Governments of Germany and Italy had declared war on the United States. Warning that delay invited greater danger to our country, he requested Congress to recognize a state of war between the United States and Germany and between the United States and Italy. This Congress did.

COMBINATION OF U. S.-CANADA WAR OUTPUT

In a statement issued on Dec. 22, President Roosevelt said the Joint War Production Committee of Canada and the United States, which recommended to the two governments a combined all-out war production effort and the removal of any barriers standing in the way of such combined effort, had his full approval. He said he had instructed all departments and government agencies to abide by the letter and spirit of the Committee's recommendations, and, in addition, had requested Milo Perkins, the United States chairman, to investigate, with the aid of the Tariff Commission and other interested agencies, the extent to which legislative changes would be necessary to give full effect to the declaration. The Joint War

Production Committee, established by the two countries on Nov. 5, recommended that neither Canada nor the United States permit anything to stand in the way of a program of victory over the Axis Powers. In concluding his statement the President said that "through brute force and enslavement, Hitler has secured a measure of integration and coordination of the productive resources of a large part of the Continent of Europe. We must demonstrate that integration and coordination of the productive resources of the Continent of America is possible through democratic and free consent."

ROOSEVELT-CHURCHILL WASHINGTON CONFERENCES

The surprise arrival in Washington of Prime Minister Winston Churchill was announced from the White House on Dec. 22. The primary purpose of the conference between the President and the Prime Minister, according to the announcement, was "the defeat of Hitlerism throughout the world." It was expected that there would be evolved an over-all unity in the conduct of the war, and that other nations would be asked to participate to the best of their ability. On Dec. 27 the President reported that much had been accomplished in the conferences which, in addition to representatives of the United States and Great Britain, had included the Russian and Chinese Ambassadors, the Canadian Prime Minister and the Netherlands Minister. The conferences, according to the President, would continue for an indefinite time.

An early outgrowth of these conferences was a war pact signed on Jan. 2, 1942 by 26 countries at war with one or more of the Axis Powers. The text of the allied joint agreement follows:

"Declaration by united nations:

"A joint declaration by the United States of America, the United Kingdom of Great Britain and Northern Ireland, and the Union of Soviet Socialist Republics, China, Australia, Belgium, Canada, Costa Rica, Cuba,

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Czecho-Slovakia, Dominican Republic, El Salvador, Greece, Guatemala, Haiti, Honduras, India, Luxembourg, Netherlands, New Zealand, Nicaragua, Norway, Panama, Poland, South Africa, Yugoslavia.

"The governments signatory hereto,

"Having subscribed to a common program of purposes and principles embodied in the joint declaration of the President of the United States of America and the Prime Minister of the United Kingdom of Great Britain and Northern Ireland dated Aug. 14, 1941, known as the Atlantic Charter, being convinced that complete victory over their enemies is essential to defend life, liberty, independence and religious freedom, and to preserve human rights and justice in their own lands as well as in other lands, and that they are now engaged in a common struggle against savage and brutal forces seeking to subjugate the world, declare:

"(1) Each government pledges itself to employ its full resources, military or economic, against those members of the Tripartite Pact and its adherents with which such government is at war.

"(2) Each government pledges itself to cooperate with the governments signatory hereto and not to make a separate armistice or peace with the enemies.

"The foregoing declaration may be adhered to by other nations which are, or which may be, rendering material assistance and contributions in the struggle for victory over Hitlerism.

Done at Washington, January First, 1942.

The United States of America, by Franklin D. Roosevelt.

The United Kingdom of Great Britain and Northern Ireland, by Winston Churchill.

On behalf of the Government of the Union of Soviet Republics, Maxim Litvinoff, Ambassador.

National Government of the Republic of China, Tse-wen (T. V.) Soong, Minister for Foreign Affairs.

The Commonwealth of Australia, by R. G. Casey.

The Kingdom of Belgium, by Cte. R. V. D. Straten.

Canada, by Leighton McCarthy.

The Grand Duchy of Luxembourg, by Hugues le Gallais.

The Kingdom of the Netherlands, A. Loudon.

Signed on behalf of the Government of the Dominion of New Zealand, by Frank Langstone.

The Republic of Nicaragua, by Leon de Bayle.

The Kingdom of Norway, by W. Munthe de Morgenstierne.

The Republic of Panama, by Jaen Guardia.

The Republic of Poland, by Jan Cierchanowski.

The Republic of Costa Rica, by Luis Fernandez.

The Republic of Cuba, by Aurelio F. Concheso.

Czecho-Slovak Republic, by V. S. Hurban.

The Dominican Republic, by J. M. Troncoso.

The Republic of El Salvador, by C. A. Alfaro.

The Kingdom of Greece, by Cimon P. Diamantopoulos.

The Republic of Guatemala, by Enrique Lopez-Herrarte.

La Republique d'Haiti, par Fernand Dennis.

The Republic of Honduras, by Julian R. Caceres.

India, Girja Shankar Bajpai.

The Union of South Africa, by Ralph W. Close.

The Kingdom of Yugoslavia, by Constantin A. Fotitch."

DOMESTIC SOCIAL AND ECONOMIC PROGRAMS

Despite the critical foreign situation, President Roosevelt declared in his message to Congress on Jan. 6, 1941 that this was "no time to stop thinking about the social and economic problems which are the root of the social revolution which is today a supreme factor in the world." The foundations of a healthy democracy he listed as follows: equality of opportunity for youth and all others; jobs for those who can work; security for those who need it; the ending of

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special privilege for the few; the preservation of civil liberties for all; and the enjoyment of the fruits of scientific progress in a wider and constantly rising standard of living. In his Budget Message he recommended measures for carrying this program into effect. He asked for the inclusion in the old-age and survivors insurance system and the unemployment compensation system of workers not yet covered. Perhaps as a partial reply to critics who expressed fear of the constant expansion of governmental activities, the President, in addressing the Boy Scouts of America on Feb. 8, told them that "the Government cannot and should not preempt those fields of private endeavor which have become an indispensable part of life in America." He expressed the same policy during the community chest drive later in the year when he said that the Federal Government ought not to try to cover the whole field of social service; furthermore, it would be a calamity for the nation and its future if private charity did not exist and grow.

NATIONAL DEFENSE

As the year progressed, President Roosevelt made statement after statement and issued order after order accelerating the program of national defense. This program included increased taxation, extension of military service, control of installment buying, setting up new government agencies, speed in building ships, and greater production of foods. In a message on July 4 to the American people, the President emphasized his off-repeated assertion that we could not save our own freedom if our neighbor nations had lost theirs. For this reason we were engaged in a mighty, unified action in defense of the hemisphere and the freedom of the seas. On July 21 he reported to Congress that the gravity of the international situation made it imperative that the army should be maintained in effective strength, and he asked for an extension of the military service for selectees, national guardsmen, and reservists.

Pointing out that inflation food prices and increases in the cost of living were threatening to undermine our defense effort, President Roosevelt recommended to Congress on July 30 that legislative action be taken "to establish ceilings for prices and rents, to purchase materials and commodities when necessary, to assure price stability, and to deal more extensively with excesses in the field of installment credit." As one step toward preventing inflation, as well as to secure increased revenues for national defense, the President recommended lowering the income tax exemption of single persons to \$750 and that of married persons to \$1,500. About the same time he created an Economic Defense Board and appointed Vice President Wallace as its head. The President's order gave the new board, consisting of seven Cabinet members in addition to Mr. Wallace, virtual veto power over any act of the defense agencies. Its purpose was defined as the protecting and strengthening of the international relations of the United States in the interest of national defense. On Aug. 11, the President issued an executive order authorizing the Board of Governors of the Federal Reserve System to take any lawful steps toward curtailing installment buying by limiting the volume of credit devoted to financing and refinancing purchases of consumers' goods.

By another executive order, issued on Aug. 28, President Roosevelt established the Supply Priorities and Allocations Board to fix priorities and allocations of the supply of materials, fuel and power and other commodities of all kinds in the United States. Taking cognizance of the fact that priorities given to strategic materials for national defense would necessarily create a shortage for civilian use, the Board was charged with the duty not only of dividing the available supply of materials between military needs and the total civilian needs of the people of the United States, but also of equitably allocating the supply between the different civilian industries and users in the United States. An-

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other executive order established a new division in the Office of Production Management to be known as the Division of Contract Distribution, with Floyd B. Odum as its director. Through this new division, it was hoped the Office of Production Management would be enabled more effectively to adjust the dislocations and alleviate unemployment resulting from priorities and material shortages, and bring about maximum use of the nation's factories and industrial plants, especially the smaller ones.

In an effort to impress upon the people as a whole the seriousness of the situation, President Roosevelt, on Oct. 22, issued a proclamation designating a six-day period, beginning Armistice Day, Nov. 11, "as a time for all persons throughout the nation to give thought to their duties and responsibilities in the defense of this country, and to become better informed on the many vital phases of the civilian defense program." With the object of keeping the people informed of the progress of the defense program, policies, and activities, the President, on Oct. 25, established an Office of Facts and Figures. The duty of the office was to assemble and arrange for dissemination whatever defense information might be announced appropriately in a time of national emergency. A few days later (Nov. 4) the President called for longer hours of work to produce munitions to defeat Hitler, and appealed to the public to halt waste and unnecessary use of materials required for the armaments program.

As an emergency measure in the defense program, President Roosevelt by an executive order dated Nov. 1, directed that the Coast Guard, normally under the Treasury Department, should, until further orders, operate as a part of the Navy, subject to the orders of the Secretary of the Navy. On Nov. 17, he asked Congress for supplemental appropriations totaling \$7,082,419,046 for the Army, Navy, and defense housing. Following the outbreak of war, the President advocated lowering the draft age for men liable for military

service. He signed the compromise law passed by Congress, which required all men between the ages of 18 and 65 to register, but which set 20 as the age for the beginning of combat service.

ST. LAWRENCE WATERWAY PROJECT

Following negotiations and an exchange of notes between Canadian and American officials, President Roosevelt on March 21, 1941 transmitted to Congress the text of an agreement between the governments of the two countries providing for the construction of dams and power works in the international rapids section of the St. Lawrence River, and providing for completion of the essential links in the Great Lakes-St. Lawrence deep waterway. The terms of the agreement contemplated that it should become effective by concurrent legislation of the Canadian Parliament and of the Congress of the United States. The President regarded the project as vital to national defense and urged that Congress take speedy affirmative action on it. Strong sectional opposition developed, however, and the measure did not come to a vote.

CENSORSHIP

The President, by executive order, formally established an Office of Censorship to be directed by Byron Price with "absolute discretion" in censoring all communications between the United States, its territories and possessions, and any foreign country. In the executive order, the President instructed Mr. Price to censor "communications by mail, cable, radio or other means of transmission . . . between the United States and any foreign country, or which may be carried by any vessel or other means of transportation." The order also created a Censorship Policy Board consisting of the Vice President, Secretaries of the Navy, War, and Treasury, Attorney General, Postmaster General, Director of the Office of Government Reports, and Director of the Office of Facts and Figures, with the Postmaster General as chair-

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man. The Board is to advise the director on policy and the coordination and integration of censorship.

LABOR

A steadily increasing number of strikes which threatened the program of national defense marked the first half of the year and eventually led to decisive action by the Administration. On June 9, by order of President Roosevelt, troops took control of the North American Aviation Co. plant at Inglewood, Calif. after an outlaw strike of the United Automobile Workers, C. I. O., had interfered with production of military planes for this country and Great Britain. The plant was returned to the owners on July 2 when the President reached the conclusion that it would be privately operated in a manner consistent with the needs of national defense. At the same time he warned that, if efforts were again made to interfere with defense production, he would not hesitate to take whatever steps might be necessary to assure its continuance.

Not long afterward, navy officers took over and operated the Federal Shipbuilding Co.'s plant at Kearny, N. J. where a strike had interrupted the government's shipbuilding program. On Oct. 30, President Roosevelt ordered the War Department to take over and operate the plant of Air Associates, Inc. at Bendix, N. J., because labor disturbances there had been interfering with national defense. In taking this action, the President asserted the country was in danger. He was here merely repeating a warning he had issued on a number of previous occasions, and particularly with respect to labor in his Labor Day address of Sept. 1. He declared that no group of Americans had a greater stake than organized labor in the defeat of Nazism because trade unionism was a forbidden philosophy under the dictators.

In a letter read on Oct. 7 to the American Federation of Labor convention in Seattle, the President called upon labor and management to cooperate at all times in the use of the Conciliation Service of the United

States Department of Labor and the National Defense Mediation Board for the adjustment of differences. He urged that organizational rivalries and jurisdictional conflicts be discarded and declared that "the establishment of peace between labor organizations would be a patriotic step forward of incalculable value in the creation of true national unity."

Threatened with a strike of 53,000 workers in the captive mines of big steel corporations following a demand for a union shop in these mines, President Roosevelt, on Oct. 26, appealed to John L. Lewis and his associate officers of the United Mine Workers, "as loyal citizens, to come now to the aid of your country." He warned that there must be uninterrupted production of steel, the basic material of our national defense, and asked that work continue at the captive coal mines pending the settlement of the dispute. Following a protracted and detailed correspondence with Mr. Lewis, the President asked the executives of the steel companies and Mr. Lewis to accept one or the other of the following alternatives: (a) Allow the matter of the closed shop in the captive mines to remain in status quo for the period of the emergency, all other parts of the Appalachian agreement applying, or (b) submit this point to arbitration, agreeing in advance to accept the decision so made for the period of the national emergency without prejudice to rights in the future. The latter alternative was accepted and the United Mine Workers of America (C. I. O.) voted to send its men back to work at once. President Roosevelt appointed Dr. John R. Steelman, head of the Labor Department's conciliation service, as chairman of the arbitration board, with John L. Lewis and Benjamin F. Fairless, president of United States Steel Corporation, as the other two members. On Dec. 7, the board, by a vote of two to one, voted in favor of extension to the captive mines of the union shop provision of the standard Appalachian agreement.

Following the outbreak of war, the

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President called upon representatives of organized labor and industry to meet with public representatives in an effort to reach a binding, but voluntary, agreement on a basic war-labor policy guaranteeing not only uninterrupted production but greater productive speed for the duration of the war. On Dec. 23 he brought this labor-management conference to a close by accepting the points on which the conferees were in agreement: no strikes or lockouts during the war; all disputes to be settled by peaceful means; the President to set up a War Labor Board to handle disputes.

APPOINTMENTS TO THE SUPREME COURT

On June 12 President Roosevelt

nominated Associate Justice Harlan Fiske Stone of New York to be Chief Justice of the United States in place of Charles Evans Hughes, who announced his retirement, effective July 1. The President also nominated Senator James Francis Byrnes of South Carolina as an Associate Justice to replace James Clark McReynolds who retired Jan. 22, and Attorney General Robert H. Jackson of New York as an Associate Justice to take the seat vacated by the election of Justice Stone. All three nominations were confirmed by the Senate. Mr. Stone's elevation marked the second time in our history that an Associate Justice had been made Chief Justice, the only previous instance being that of Edward W. White.

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BY HAROLD M. DORR AND JOHN PERKINS
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FRANKLIN D. ROOSEVELT

In his acceptance speech President Roosevelt said that he was acting contrary to his personal desire to retire from public life, but, because of growing American responsibilities in the world crisis, he had decided that the issue should be left to the judgment of the American people. The American people, in a vote of confidence, returned him to the presidency, but the events of the ensuing years will determine whether or not Roosevelt's name is to be linked with those of Washington and Lincoln as America's immortals.

His third inaugural was darkened by the threat of Nazi world domination. "The whole world," the President said (May 28), "is divided between human slavery and human freedom—between pagan brutality and the Christian ideal." In this divided world the President believed that the power and influence of the United States should be used to preserve the Christian ideal and that he, as President, should assume the responsibility for unifying

and coordinating the strength of the anti-Axis powers in their struggle to perpetuate democratic principles. He had declared the United States to be the "arsenal of the democracies." America's function now was to implement that promise, to reestablish the freedom of the seas, and to guarantee the security of the Western Hemisphere. With these as his objectives, President Roosevelt became the world's leading advocate of the democratic system.

He undertook at once to unify the American people, to inspire in them a new appreciation for free institutions, to awaken them to the gravity of the Nazi challenge, and to prepare them, if necessity should demand, to rise in defense of American interests. In his annual message to Congress he outlined a plan for democratic world peace based upon four essential freedoms: "freedom of speech and expression," "freedom of religion," "freedom from want," and "freedom from fear." His interpretation of America's responsibilities, and the means for the

enforcement of those responsibilities, were set forth in his subsequent public addresses.

Comparing the trials of the period with those of the times of Washington and Lincoln, he declared (Inaugural Address): "In this day the task of the people is to save that nation and its institutions from disruption from without . . . our strong purpose is to protect and perpetuate the integrity of democracy. . . . We do not retreat. We are not content to stand still. As Americans we go forward, in the service of our country, by the will of God." Speaking specifically to the isolationists (July 4), he characterized as "childlike fantasy" the notion that the fate of democracy in other lands is of no concern to us. The United States, he said, "will never survive as a happy and prosperous oasis in a desert of dictatorships."

The President's many public addresses were studded with warnings to the Axis powers and with specific pledges of aid to the war-torn democracies. In an attempt to establish definite, common objectives for the anti-Axis nations and to coordinate their defense efforts, he joined with Prime Minister Churchill in the formulation of war aims looking toward a just and enduring peace. This "Atlantic Charter" included, with some elaborations, the "essential freedoms" outlined in Roosevelt's earlier message to Congress. Before the close of the year Churchill came to Washington to work out, with the President and representatives of other anti-Axis powers, a plan of joint action for their common defense.

President Roosevelt recognized that complete national unity and absolute singleness of purpose were essential to the realization of these objectives. He pleaded for "holidays for the duration" for partisan politics and in other factional differences. In his annual message the President said: "In the recent national election there was no substantial difference between the two great parties in respect to that national policy [democratic principles]." He called attention to Willkie as an example of a patriotic American who

had "in word and in action," rallied in support of the common cause (Jackson Day Dinner Address).

In the course of the year the President made only infrequent references to partisan differences and included members of the minority party in Congress in his White House Conferences. He declared that appointments to key defense posts—economic, civilian and military—should be made without reference to political affiliations, and refused to deny rumors that the Administration would support Republican members of Congress who had consistently endorsed his foreign policies. Yet the Administration was in no sense non-partisan, and there is some justification for Dewey's criticism: "[The President] calls for national unity in one breath and then, in the next, launches a program of first importance without as much as a gesture of consultation toward the minority."

President Roosevelt was worried by the unsettled labor situation and was especially irritated by the jurisdictional disputes and unauthorized strikes. He denounced that "small but dangerous minority" of industrial managers and labor leaders who persisted in placing selfish interest ahead of the general welfare (Navy Day Address). He lashed out on several occasions at the obstructionists and isolationists who, he declared, "ask me to become the modern Benedict Arnold and betray all that I hold dear—my devotion to our freedom, to our churches, to our country." As a rule he was general in his denunciations but on infrequent occasions the President resorted to personal attacks. In spite of the activities of certain groups, he appeared reasonably satisfied with the support given his policies. On Nov. 29 he wrote to Senator Gillette: "While there have been some expressions of different views in regard to our foreign policy, I have always felt that those differences were of degree but not of principle."

Although the President's leadership was not seriously challenged, it was frequently questioned. There were evidences of strong opposition, both in

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and out of Congress, to his labor and price-fixing policies, to the Atlantic patrol, to the lease-lend program, and to legislation dealing with neutrality and the selective service. Confident in matters of broad policy, the President frequently demonstrated uncertainty in the execution of those policies. This weakness is well illustrated in his attitude toward labor and in the many reorganizations of the defense administration. A certain distrust of people and administrative routine is demonstrated in his reliance upon personal agents and his hesitancy in the delegation of executive authority. In spite of evident weaknesses, the President's leadership, especially in the field of foreign affairs, has won popular approval. Public opinion polls disclosed substantial majorities ranging up to 80 per cent supporting his policies. Following the attack upon Pearl Harbor, very few of the consistent anti-Administration leaders, in pledging their support to the war effort, openly criticized the policies that led to the outbreak of hostilities.

WENDELL L. WILLKIE

The defeated Republican presidential candidate rang down the curtain on the political scene of 1940 with a stirring plea for national unity and increased aid to Britain. In 1941 Willkie directed his influence and energy to the accomplishment of those objectives; and, in so doing, he so ardently supported Roosevelt's foreign policy that Republicans were impelled to speculation concerning the political affiliation, if not the affection, of their erstwhile leader.

In January Willkie received permission to visit England and left (Jan. 22) on an 18-day tour of inspection to determine for himself the conditions in and the needs of the besieged Isle. Upon his return to the United States (Feb. 9) he became one of the foremost advocates of the President's foreign policies. A few days later Willkie appeared before the Foreign Relations Committee of the Senate and unqualifiedly endorsed lease-lend aid to the democracies. In his testi-

mony he attacked as "wholly unrealistic doctrine" the argument against aid and insisted, in view of Nazi ambitions, that American security could be guaranteed only in terms of continued British resistance. The doctrine that we can withdraw unto ourselves, Willkie denounced as "too simple." "It has no regard for the way in which the world is actually built," he declared. Thereafter he supported, almost without qualification, the foreign policy of the Administration and appealed to Republicans, not only to rally in support of that policy, but to wipe the "dirty smudge of isolationism" from the face of the party and to assume a positive attitude in "an international situation which by reason of its very chaos offers to America the opportunity for world leadership. . . . I am here," he declared, "to challenge you [Republicans] to a higher fate than compromise, negation, and death."

Roosevelt's domestic policies did not, however, receive from Willkie the same enthusiastic endorsement. He criticized the Administration for procrastinating and toying with "trial-balloons" when the circumstances demanded action. He was, he said, "disappointed with many of its domestic policies and disgusted with its handling of the defense efforts." He held the Administration responsible for "much of the people's confusion and misunderstanding," and warned that, if errors in domestic policy were not corrected, the foreign policy would be endangered. He charged specifically that the Administration did not have a "consistent and recognizable" labor policy; that the President had failed to enlist the support of the ablest men to direct the defense program, that he demonstrated uncertainty in the execution of policies, and that he refused to delegate power.

Willkie revealed little embarrassment in reconciling his position with the one he had taken in the campaign of 1940. He dismissed some of his earlier charges with the remark, "They were campaign speeches," and, with national unity the issue in 1941, he saw no purpose in "raking over old coals." He did, however, insist that

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he had been sincere in his belief that the reelection of Roosevelt would jeopardize democratic institutions. He reaffirmed his faith in a strong "loyal opposition" and maintained that the Republican party should accept the responsibility of insuring that extraordinary powers would be exercised only for the duration of the emergency.

In spite of his support of the Administration's foreign policy and his pointed criticisms of Republican isolationist tendencies, Willkie announced that he entertained no intention of deserting the party or of relinquishing his leadership. He protested that he was not attempting to exploit the war situation to win the Republican nomination in 1944. For the present, he said he was more interested in ideals and principles than in partisan issues. Willkie refused to be drawn into an open contest with Dewey and Taft to control the appointment of a National Chairman. At present it appears that Martin's decision to retain the post, if not an actual victory for Willkie, did not jeopardize his standing in the party. In an abortive attempt to read him out of the party, Willkie was characterized by a mid-Western Congressman as "this imposter, this fifth columnist, this preposterous man, this Trojan horse who is seeking to split the Republican party wide open." Commenting upon Willkie's strength in the party, Martin said that he had a "strong hold on members of the party" and that he would continue to be a "strong factor in building up the party." A Gallop poll of the same month (March) attributed to Willkie greater popular support than he had enjoyed at any time during his campaign. In September Willkie announced that he intended to take an active part in the 1942 Congressional elections and implied that his influence would be used to direct the party toward an enlightened "internationalism." Although the events of the year revealed both support and opposition, the confused war situation obscures Willkie's real strength as a potential national leader.

HENRY A. WALLACE

Wallace does not possess the characteristics which are commonly attributed to American Vice Presidents. This fact, supported by the Convention charges that the nomination had been dictated from the White House, led to speculation concerning the reasons for the selection. The rumor that Roosevelt planned to resign, if re-elected, drew a direct denial from the President. Events of the year substantiated a much more reasonable theory. As a vice presidential candidate in 1920, Roosevelt raised the question in a magazine article, "Can a Vice-President Be Useful?" Roosevelt appears to be seeking an answer to the question raised some 20 years ago.

Reports intimated that the President depended upon Wallace's aid in winning support in the Mid-West for the Administration's foreign policy. The Vice President is reported also to have been influential in Congressional circles.

The Vice President served in two key positions in the Emergency Defense Program. He was made chairman of the Economic Defense Board, an agency created (July 30) to coordinate the nation's war-time trade and fiscal policies and to plan for post-war reconstruction. Later in the year, in an attempt to eliminate internal dissension in the Office of Emergency Management, the President created (Aug. 28) the Supply, Priorities and Allocations Board and made Wallace chairman. Although criticisms of the production program continued, press reports credited Wallace with substantial accomplishments.

In spite of his other duties, Wallace continued his efforts to promote a better understanding among the American Republics. He advocated hemisphere defense and urged "education and tolerance" as safeguards against the intrusion of foreign influences. The crisis in world affairs, he said, "has brought us to a fuller realization of common interests—economic, social, moral and political." He censured the people of the United

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States for their failure "to be truly neighborly." "We have," he said, "indulged, maladroitly and mistakenly, a superior complex with regard to Latin America. . . ." In observing "I Am an American Day," Wallace expressed the hope that the people of this hemisphere would regard themselves as possessed of "a super-citizenship in America, the Western Hemisphere, where nations earnestly try to settle their disputes peacefully, without lying, treaty-breaking, or aggression."

It is too early to attempt an appraisal of Wallace's accomplishments as Vice President. His personality, experience, and industry may add a new significance to the office. His friends and admirers are insisting that Wallace is the most talented Vice President since Thomas Jefferson and, thinking in terms of the latter's career, are convinced that Wallace's election to the office should not be interpreted as equivalent to retirement from the national political scene.

CORDELL HULL

Undoubtedly Hull would have retired from public life at the conclusion of his second term had he not been prevailed upon, because of his experience and demonstrated ability, to continue on as Secretary of State. On March 3, he established a new tenure record for the office, exceeding the previous record of seven years and 363 days established by William H. Seward. Although ill-health and the burdens of his office restricted his political activities, his influence in national affairs should not be underestimated.

Cognizant of both official and popular confidence in Hull's judgment and integrity, the President depended upon his Secretary of State to prepare the country for the shock of events in the rapidly developing foreign situation. Many of Hull's public statements were widely interpreted as preliminary announcements of formulated policies. In addressing the American Society of International

Law (April 24), Hull lashed out against "would-be conquerors" and declared that the safety of the world calls for resistance "wherever resistance will be the most effective." Within the month (May 18), in a speech carried by the National Broadcasting System, he said that in the face of the Axis' attempts to dominate the seas, the defense of America "requires . . . that Great Britain receives adequate supplies for her successful resistance." Subsequent events demonstrated that these speeches were calculated to crystallize public opinion in support of expanding naval activities in the Atlantic. In the May speech, Hull presented a five-point plan for post-war reconstruction. This program for economic rehabilitation, the first such proposal offered by any member of the Cabinet, may well be compared with the Roosevelt-Churchill "Atlantic Charter." Later in the year Hull's influence was enlisted in support of the repeal of the Neutrality Act and the proposal to arm merchant ships.

In spite of the protests raised in opposition to the Administration's foreign policies, very little criticism was directed against the conduct of affairs by the State Department. Generally recognized as one of the President's closest advisers, Hull did not, however, escape unscathed. For example, in mid-December, Senator Taft charged that an investigation might reveal that the Navy had not been fully informed on the course of the negotiations with Japan. Hull's denial of the charge is noteworthy in that it demonstrated some contrast to the calm demeanor and patience which has characterized his administration. Evidences of taut nerves and irritability were also to be noted in his bitter denunciation of Japan and in his refusal to grant audiences to the representatives of the other Axis powers who called to deliver official notices of their countries' declarations of war. Hull must, however, have found some comfort and consolation in the responses of the Latin-American Republics following the Axis' declarations of war upon the United States.

FRANK KNOX

The activities of Secretary of the Navy Knox were not calculated to allay the fears of those who had, in opposing his appointment, labeled him an "armed interventionist." In word and deed he proved himself a fighting Secretary. He lost no opportunity to emphasize the Axis threat to our security, to castigate the isolationists, or to stimulate the American defense efforts. Knox was by far the most voluble and aggressive member of the President's official family: he supplanted Ickes as the official "name-caller," and was surpassed only by Senator Pepper in demanding armed intervention.

In his many public addresses he insisted upon "all-out" aid to Britain with delivery insured, pleaded for industrial peace and increased production, endorsed the St. Lawrence Waterway and the development of the Great Lakes shipyards, demanded the repeal of the Neutrality Act and the arming of merchantmen, and asked for the immediate protection of American interests in the Pacific. Knox shared with Hull the responsibility for sounding out and crystallizing public opinion in support of the Administration's foreign policy. In many cases the sequence of events revealed Knox as the official White House spokesman; in other cases it is difficult to know whether the Secretary was speaking "out of turn" or whether his utterances were regarded by the President as "trial balloons."

Among Knox's many speeches his most startling announcement will be found in his Boston speech (June 30) and later substantiated in his address before the American Legion Convention (Milwaukee, Sept. 15). The significance of these speeches lies not only in the gravity of the implications and the date of the original declaration but also in the fact that they heralded the rapidly changing sequence of events which led to declarations of war. The contrasting responses to these two speeches, separated in time by some 75 days, are equally interesting and indicative. His Boston declaration, "The time to

use our Navy to clear the Atlantic of the German menace is now at hand," was greeted with widely divergent press comments and Congressional demands for either his resignation or impeachment. In his Milwaukee appearance he "brought a cheering American Legion Convention to its feet" when he announced that "beginning tomorrow" the Navy would, in carrying out the President's orders (see President's Address, Sept. 11), "provide protection" for all ships carrying lease-lend supplies "between the American continent and Iceland." Two days later he added: "The escort of convoys by war vessels is only one of the methods that can be used and are being used in all our defense areas." He refused, however, to define "defense areas."

Continuing his warlike yet prophetic pronouncements, Knox, in urging the repeal of the Neutrality Act, spoke of Hitler as "the enemy" and asserted that "our army must be used wherever and whenever it is needed." (Sept. 23.) On Nov. 1 he assailed the sinking of American ships as "worse than piracy," and declared: "We are in this fight to the finish." Ten days later, in an Armistice Day Address, he surveyed our position in the Pacific and announced: "Our people must understand that grave questions are about to be decided—that the hour of decision is here." Secretary Knox supplemented his oratory with action. He ran his Department, visited camps, naval bases, training stations, and shipyards. And, characteristically, following the attack upon American possessions, he flew to Pearl Harbor to survey the damages and fix responsibility.

Knox's official duties and his persistent demands for national unity kept partisan politics well in the background, yet the fact that he is a Republican was not entirely forgotten. He was reported to have pledged active support in the forthcoming Congressional elections "to consistent Republican supporters of the Administration's foreign policy." He gave assurance of active support, including campaign speeches, even if the Presi-

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dent were backing Democrats in their states.

FIGURELLO H. LA GUARDIA

La Guardia was in 1941 one of the nation's busiest men. He served in the course of the year as Mayor of New York City, president of the Conference of Mayors, chairman of the American-Canadian Joint Board on Defense, director of the Office of Civilian Defense and active head of Civilian Defense in his own city.

In connection with his many jobs (or in spite of them), he found time for his usual round of speeches. Almost all of his public addresses were directed to the current world conflict or to its possible consequences. In urging "all-out" aid to Britain, he criticized the short-sightedness of Ex-President Hoover and others who were outspoken in their opposition to the use of the American Navy to protect shipments. "We must," he said, "see that this equipment reaches England because every bit of help our country gives to England is help to ourselves." (British War Relief Society, March 21.) He clarified his reasoning later (Conference of Fire Chiefs, Aug. 19) by declaring that, in his opinion, the fall of England would be the signal for sudden air raids upon American seaboard cities. As early as August, La Guardia was urging the need for immediate planning to insure social and economic security in the post-war period. In November he predicted the defeat of Hitler within the year and added: "War doesn't frighten us any more, it's the after period that is frightening." He urged the planning of public works programs reaching to railroads and other utilities to insure against widespread unemployment during the post-war period of business reconstruction.

In accepting appointment as director of the Office of Civilian Defense, he characterized the position as that of coordinator of local, state and national organizations and implied that the local units would accept the responsibility for recruiting and training the personnel. Encouraged by the

early flood of offers to cooperate in the program, La Guardia expressed the opinion that the duties of the director would be less arduous than he had anticipated. The program was initiated with some other optimistic announcements and some preliminary planning but with little activity other than the ill-advised aluminum drive. The director gave his attention primarily to other matters and the program at once lost momentum. Little was actually accomplished during the first six months (May-October). In early December, La Guardia, speaking in Chicago before the Conference of Mid-Western Governors, deplored public indifference to the program but overlooked the possibility that the effort was suffering from the lack of aggressive leadership. The real weaknesses became evident when West Coast cities were threatened with bombings. Resentment against La Guardia's leadership mounted as feverish attempts were made to rehabilitate the program. The criticisms were directed not so much at the incompetencies of the leadership as at the inability of the director, because of the multiplicity of his functions, to give sufficient time to civilian defense. The prevailing opinion demanded that the organization be placed on a permanent basis with a full-time director in charge.

In mid-summer La Guardia was compelled to turn his attention from the national political scene to the problems of his own reelection. The shifting political tide in New York City and an accumulation of petty grievances seriously challenged La Guardia's third-term candidacy. The campaign produced some of the strangest political alignments in the history of the city. Although actively opposed by local, state, and national old-line Democrats, the Mayor was forced by reason of political expediency to request that the Young Democrats make no attempt to secure his nomination. Aligned in support of La Guardia were such prominent Republicans as Thomas E. Dewey and Wendell L. Willkie. He was endorsed by the American Labor Party, including

the left-wing group, and was actively supported by President Roosevelt and influential new deal Democrats. La Guardia was reelected by the close margin of 133,841 votes.

Although many of the endorsements were based exclusively upon his record as mayor, political observers were inclined to view the alignments as politically significant and to speculate upon the possible permanent influences on city and state politics. Three possible repercussions were frequently noted: (1) the weakening of party lines to such an extent that non-partisan elections would be inevitable; (2) a definite break between the old-line and New Deal Democrats; and (3) the positive strengthening of the Republican party in the state.

HERBERT HOOVER

Former President Hoover had previously distinguished himself as an intelligently bitter critic of the Administration's foreign policy and through the year, viewing our relations to the European conflict with alarm, he criticized the President's "war policy" and warned that American involvement would constitute a direct threat to our political and economic democracy. Declaring that, "Neither isolation nor intervention is possible or wise," the Ex-President persisted in his demands that America turn away from the conflict, make her defenses impregnable, guard against decreasing standards of living, and prepare to grapple with those forces, both socialist and fascist, which are pressing for economic dictatorship. In August he joined with other Republican leaders in an appeal to Congress to put a stop to the "step by step projection of the United States into undeclared war."

Hoover believed that for America to become involved in the war, which he described as a "military stalemate," was neither wise nor necessary. He denied that Britain would be aided by American intervention, and predicted the collapse of the Hitler regime without the necessity of military defeat. "We should," he declared, "preserve

our strength that, unexhausted, we may give real aid to reconstruction and stabilizing peace when Hitler collapses of his own over-reaching." (Chicago, Sept. 17, speech carried by C.B.S.) Our "national duty," in his opinion, "is not for us to go to war but to give her [Britain] every tool that will really aid her. . . ." In this he urged national unity and called upon the country to make of it "a good job." He admitted that there were risks in this course but it is, he said, "the least perilous road we can now take." He remained, however, unalterably opposed to the use of the Navy to insure the delivery of goods. Hoover was perplexed and perturbed by Russia's entrance into the war. He had bitterly protested Russia's attack upon Finland as an attempt "to destroy democratic governments everywhere." Asking now if Stalin were any better than Hitler, he declared that Russia's entrance had made a "gargantuan jest" of the interventionist argument that the United States should become involved to preserve democratic principles.

Some three weeks before Japan's attack upon Pearl Harbor, Hoover entered his most vigorous protest against the Administration's war policy. Before addressing a Chicago audience (Union League Club, Nov. 19, speech carried by C.B.S.), he is reported to have said: "I hope to deliver the strongest speech of my life on 'Shall we send American armies to Europe?' I am convinced this is the next administration move and unless it is checked, we are in for a ten-year war." Such a war, he said, would not only result in a "futile waste of American life," but would endanger American freedom. Asserting that the present conflict did not threaten our national security, he said: "We can dismiss at once the bogie that Hitler can invade the Western Hemisphere. . . ." Three weeks later, in declaring his unqualified support of the American declaration of war, he said: "The President took the only line of action open to any patriotic American. . . . We have only one job to do now and that is to defeat Japan."

I. AMERICAN POLITICAL HISTORY

ROBERT A. TAFT

Of the leading contenders for the Republican presidential nomination, Taft was the only one to hold public office at the close of the year. He retained his seat in the Senate and, with it, his role as critic of Administration policies. His activities in the Senate Chamber were supplemented by frequent public appearances. Although prominent in anti-Administration circles, Taft did not jeopardize his standing in the party by openly engaging in the contest for control of the organization. He did, however, support the anti-Willkie faction in declaring that Martin should be permitted to select "a salaried manager" who would concern himself with the "grass roots" organization rather than with party policy.

Taft interested himself in many phases of national policy but as usual gave particular attention to problems of finance and foreign affairs. Early in March (Ohio Society of New York) he assailed the Administration, charging it with fiscal mismanagement, and said that the existing chaos jeopardized the defense program. "It is peculiarly necessary," he said, "that we place our finances on an absolutely sound basis, because we are up against an opponent whose organization in this field is nothing if not efficient." He foresaw dangers of inflation in the rapidly developing war economy and favored controls in the form of increased tax levies rather than resort to a managed economy including price-fixing and monetary manipulation. He favored reducing "the artificial purchasing power we have created by taking some of the money away from the people in taxes, so it can't be spent to raise prices and pyramid production." He characterized the 1941 tax law as "only a good beginning" but opposed the Administration's corporation tax plan. He demanded the repeal of inflationary legislation and called for huge reductions in non-defense spending and strict economy in defense appropriations.

Although not unalterably opposed to price-fixing, Taft denounced as "absolutely illegal" the price orders rela-

tive to coal and steel issued by Leon Henderson, Federal Price Administrator. This action he said constituted a "usurpation of authority which lies only in Congress." If price-fixing were to be resorted to, Taft contended that it should be under express legislative grant, strictly limited in point of time, and should carry no delegation of power to the President. The Administration of the policy, he believed, "should be vested in a board established by Congress, appointed by the President and confirmed by the Senate." The attitude here expressed is typical of Taft's reactions to increased executive power and the tendency to centralize authority in the national government. Protesting against the tendency to centralize control through the system of grants-in-aid, Taft told the National Education Association (June 30) that "Federal control of education, eliminating local self-government, would abandon one of the real safeguards of freedom in the United States."

Taft favored aid to Britain in sufficient quantities to insure the defeat of Hitler but opposed any action which threatened to involve the United States in war. In supporting the lease-lend policy, he offered amendments to the bill designed to prohibit the entry by American ships into combat zones, convoying under protection of the American Navy, the use of American bases by the British, and the transfer of military equipment. He opposed an extension of the lease-lend policy to Russia. He contended that "the victory of communism in the world would be far more dangerous to the United States than the victory of fascism" because the philosophy of the former appeals to far greater numbers of people.

Classing them as steps toward involvement, Taft consistently denounced that series of acts by which American influence was steadily extended over the Atlantic. He protested that the question of convoys had become only a smoke screen. The real issue was peace or war. He condemned the occupation of Iceland and the President's order to the Navy to

"shoot on sight" as "illegal steps in an undeclared war." Fully cognizant of the war powers of the President, Taft declared there is but one justification for war—"defense of the nation and its freedom against foreign and domestic enemies." In spite of his semi-isolationist position, Taft was not embarrassed at the outbreak of hostilities either by commitment or philosophy in lending his full support to the successful prosecution of the war.

THOMAS E. DEWEY

Dewey joined with other prominent political leaders in pleading for national unity but, at the same time, spoke out against any assumption of complete responsibility by a single party. "The continuation of the two party system," he declared, "is the difference between freedom and slavery." The preservation of that system in the United States is the most important function of the Republican party. He chided the Administration, in his Lincoln Day Address, asserting that the President "calls for national unity in one breath and then, in the next, launches a program of first importance without as much as a gesture of consultation toward the minority."

As in his campaign of 1940, Dewey gave his attention primarily to internal affairs. The social legislation of the past eight years was characterized as "patches on the wounds of the past decade." "We have bought and paid for them with government deficits," he declared. He did, however, support the lease-lend bill and advocated "every possible aid to Britain short of war." He declared himself opposed to dictatorships, both domestic and foreign, and attacked Lindbergh's Des Moines speech by branding the injection of religious and racial prejudices into any discussion of our foreign policy as an inexcusable abuse of the right of free speech.

Dewey accepted leadership in the drive to raise money for the development of recreational facilities for men in the military and naval services. In mid-summer he visited a number of the camps throughout the country, and thereafter evinced displeasure

with the pace at which construction was proceeding. In spite of the fact that the fund was over-subscribed, construction lagged. Dewey criticized the "government's failure" to provide the promised facilities as an example of the "red-tape" in which the government was entangled.

In spite of his activities, the year closed without any disclosures as to Dewey's political future. He refused to stand for reelection to the office which won him national acclaim. When questioned concerning the New York gubernatorial election and the presidential election of 1944, Dewey answered: "Many things might happen before that time." When accused of a deal with Willkie concerning these same elections, Dewey replied that he didn't make "political deals," and added: "I have no political plans of any nature."

BURTON K. WHEELER

One of the political paradoxes of recent years is that Senator Wheeler (Montana) and President Roosevelt, recognized liberals and leaders in the struggle to establish social and economic reforms, should be in such violent disagreement on matters of foreign policy. The most generous view of the former's opposition and obstructionist tactics is that he is a confirmed and sincere isolationist of long standing. Although generally considered to be personally affable and instinctively kind, Wheeler became the most bitter and caustic of the President's critics. Throughout the year he conducted a running battle of words against the Administration in which he contended that the foreign policy reflected the opinion of a group of advisers who "couldn't be elected to the office of dog-catcher in their own home town."

The consequences of Wheeler's attacks and disclosures carried beyond the point of personal annoyance and irritation. He was accused of injuring American interest abroad, of fomenting dissension at home, and of meddling in military affairs. He jeopardized our relations with Canada by referring to that country as a "colony."

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He evoked a quick denial from the War Department when he declared that the Army was prepared to purchase 1,500,000 caskets. The President felt obliged to take personal notice of Wheeler's charge that American foreign policy would lead to "ploughing under America's youth." Secretary of War Stimson charged the Senator with subversive activities, "if not treason," when Wheeler used his franking privilege to poll 1,000,000 persons, including some men in army camps, on the question of extending the period of military training. Cognizant of army plans to occupy Atlantic outposts, Wheeler announced in early July that American troops would leave for Iceland around the 23rd or 24th of the month; and in November he claimed to have definite information to the effect that the American Navy was taking aggressive action in the Pacific as well as in the Atlantic.

Wheeler overlooked no opportunity to embarrass the Administration or to launch a personal attack upon the President. He joined with the America First Committee to carry the fight directly to the people. He charged that the defense efforts were "bogging and breaking down," that the President was withholding vital facts from the people, and that America's faith in democracy was being poisoned by broken promises. Yet, when the United States was attacked, he became an advocate of aggressive prosecution of the war. "We must," he said, "lick hell out of the Japs."

JOHN L. LEWIS

Although not regarded as politically powerful, Lewis must be included in a review of national personalities. In the opinion of many competent observers, the events of the year brought irreparable loss of prestige and influence to one of the most powerful figures to appear on the American scene in many a year. It was generally conceded that Lewis had over-reached himself in his break with the President and that, in their subsequent maneuvering for labor's support, the President had successfully thwarted Lewis'

political ambitions and perhaps actually undermined his leadership in the appointment of Sidney Hillman as associate director of the Office of Production Management.

During the first months of the year Lewis was frequently classed with the leading isolationists. He opposed the lease-lend program as a step toward war, and was reported willing to give his support to the organization of a "peace party." One report heard in Congressional circles associated Lewis with a proposed movement to "arouse the public to the dangers of war" in an attempt to neutralize the Administration's foreign policy. Whether or not these reports can be substantiated, it is true that Lewis opposed the Administration's foreign policy, availed himself of every opportunity to embarrass the President, and bitterly criticized the government's attitude toward labor, especially as reflected in the activities of Hillman.

Lewis consistently refused to recognize Hillman as a representative of labor and demanded the appointment of a true representative of labor to a post of Cabinet rank. Charging that the Administration had not taken labor into its confidence, he warned that government could not expect much cooperation. "Many people," he said, "are fearful of the future because they are losing confidence in the government and the government's policies." Whatever may have been the implications, subsequent events tended to minimize the political significance of these warnings. Important labor groups supported Administration policies, especially in the field of foreign affairs. In May, Labor's Non-Partisan League rejected, by a margin of more than two to one, the isolationist proposal demanding that the United States "get out and stay out of the war," and in July the New Jersey unit of that organization revolted against Lewis' leadership. On Sept. 1, "Fight For Freedom, Inc." released the results of a poll which disclosed that 52 leading labor editors supported the Administration's foreign policy and that only three supported the isolationist point of view. At about the

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same time the United Electrical, Radio and Mechanical Workers of America issued a report calling upon all labor groups to unite in support of "every step necessary to crush Hitlerism."

In spite of his constant badgering of the Administration, Lewis' attitude can not be explained in terms of thwarted ambitions. He drove toward the same objectives and employed the same tactics as had characterized his rise to power. He strove as always to promote the best interest of labor: he insisted upon, and obtained, the closed shop for the United Mine Workers, he

protested against the use of troops in labor disturbances, he preferred direct action and distrusted mediation, and he demanded for labor a fair share of the national income. He sacrificed prestige and faced bitter denunciations to insure that labor would not become a victim of those who would, in times of emergency, "exploit a national situation." In so far as his influence is concerned, he said, labor "will not forget the basic necessity of protecting its own rights." The record is clear and unequivocal and the political fortunes of Lewis must stand or fall upon that record.

THE YEAR IN CONGRESS

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GENERAL

So momentous were the year's activities of the 1941 Congress that they quite naturally tend to overshadow all previous legislation enacted by that body. With the declarations of war against Japan on Dec. 8 and against Germany and Italy on Dec. 11, the long, tense prelude to American belligerency came to a close, and "total defense" took on a more immediate meaning in all minds. Party alignments were submerged. The votes in both houses of Congress were, to all effects, unanimous. Jeanette Rankin of Montana, true to a life time of pacifist conviction, alone voted against the Japanese war and even she refrained from casting a negative on the question of war with Germany and Italy.

The Draft Act went through in seven days. Introduced on Dec. 12, it received conference committee assent on Dec. 19. The third \$10,000,000,000 supplemental national defense appropriation bill passed both houses by Dec. 15.

A review of 1941 legislation reveals, however, that these steps were merely the climax of a year of foreboding and anticipation. On Jan. 6, 1941 President Roosevelt, advising the Congress on the "state of the Union" com-

mented: "The need of the moment is that our actions and our policy should be devoted primarily—almost exclusively—to meeting this foreign peril" because "as long as the aggressor nations maintain the offensive they, not we, will choose the time, and the place and the method of their attack." Insisting that social and economic problems were not to be overlooked, that general employment and general security, extended medical care, insured civil liberties, a rising standard of living were the core of the "American plan," he stated that, however, "all our domestic problems are now a part of the great emergency." This might well be taken as the central motif of 1941 legislation. With the exception of a handful of new laws—Congressional reapportionment, on agriculture, on civil service classification, on housing—and of continuing sanction for such existing civil activities as work relief, aids to agriculture, aids to youth, and social security programs, all major acts of the session were in some way related to defense or to situations arising from defense activities.

LEASE-LEND LEGISLATION

The Democratic party had marked preponderance in both houses. In the Senate there were 66 Democrats to

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28 Republicans and in the House 268 Democrats to 162 Republicans. However, this session saw several instances of political "revolts," when Democratic minorities joined with Republicans to defeat or modify Administration policies. One of the most bitter of these controversies raged over the Lease-Lend bill authorizing aid to countries engaged in war with the totalitarian nations. Before the close of 1940 President Roosevelt had stressed the need for such aid. He stressed the need again in his message to Congress on Jan. 6 following and in his budget message Jan. 8. The bill was introduced in both houses on Jan. 10 with a presidential request for speedy action, yet two months of tremendous Congressional resistance followed before it finally became law on March 11. Not until administration leaders had conceded time limits on presidential powers and a financial limit on the amount of material which could be supplied from existing or contracted-for equipment, and not until the opposition had written in the provision permitting Congress to terminate the executive powers at any time by concurrent resolution, did the House pass the bill on Feb. 8 by a vote of 260-165. The division was largely on party lines: 236 Democrats and 24 Republicans voting for the measure, 25 Democrats and 135 Republicans against it. The Senate had the bill under discussion three weeks. On the night of March 8, however, the bill passed by a vote of 60-31, with 49 Democrats and 10 Republicans *pro*, and 13 Democrats and 17 Republicans *con*. Once the policy of aid was adopted, the implementation met little resistance. On March 12 the President submitted his \$7,000,000,000 lease-lend budget, which was passed by the House, 337-55, on March 19, and by the Senate, 67-9, on March 24. (See Lease-Lend Law," p. 38.)

NEUTRALITY REVISION CONTROVERSY

Subsequent events have made the controversy over the Neutrality Act revision seem quaintly irrelevant but it was exceedingly bitter. The House

on Oct. 17 passed a bill which repealed that section of the Neutrality Act prohibiting arming of merchant vessels. The Senate amended the original bill so as to repeal also the prohibition against American ships entering combat areas, and passed it. When this revised version reappeared for approval in the House a major revolt crystallized. A large number of Democrats joined Republicans in threatening to reject it. The issue was not entirely clear-cut at this point. Many Southern Democrats, angered at the Administration's failure to curb defense strikes, seemed to be in opposition less because the Neutrality Act revision might lead to war than because, in their words, no adequate preparation against possible results of the revision could be achieved while an "unruly" labor element was in the saddle. In any event it seems evident that President Roosevelt's solemn pledge to take effective action in regard to defense strikes decided the issue, for on Nov. 13 the House voted 212-194 for the Senate amended version of neutrality revision: 189 Democrats and 22 Republicans for, 53 Democrats and 137 against.

LABOR AND STRIKES

The labor controversy had been going on all year. Since January, 1941 army officials, business men, and Republicans and Southern Democrats in Congress had been blaming the slowness of production on labor troubles. The Senate Committee on Education and Labor had directed the Legislative Reference Service of the Library of Congress to make a study of strikes in defense industries, and a report was submitted at the end of May. This report indicated that, contrary to general opinion, union relations or union recognition was the major element in only 22% of the 90 defense industry strikes prior to June 1, 1941 (excluding the bituminous coal strike of April 1941), and jurisdictional strikes comprised only 9% of the total. Wages were the chief issue in 59%, and miscellaneous "grievances" in 10%. Of course these figures do not tell the whole story since such union-recogni-

tion strikes as those at the Ford and Allis Chalmers plants involved almost 50% of the total man-days lost. Jurisdictional strikes, however, were negligible on all counts; they constituted 9% of the strikes, involved only 1% of the total strikers and $\frac{1}{2}$ of 1% of the man-days lost. In mid-March the President created a special 11-man National Defense Mediation Board. However, this Board had no legal authority to enforce its decisions, and though it proved helpful, the strike situation as a whole continued to cause apprehension.

The captive coal mine controversy in November brought matters to a head, less perhaps because of the actual issue than because of the attitude of the union leaders which antagonized many normally pro-labor citizens. On Dec. 3 the House, faced with the choice among three "strike control" measures—one was the administration-sponsored Ramspeck bill—passed by a vote of 252-136 the most stringent of them all—the Smith bill. This was definitely an Administration defeat: 129 of the 252 ayes came from Democrats; 91 of these 129 were from Southern representatives. The bill contained many unduly repressive features: prohibition of "closed shop" and jurisdictional strikes, freezing of existing closed and open shop status, removal of N.L.R.A. protection from unions which "knowingly or negligently" permit communists, bundists, or persons ever convicted of felony to be officials, the repeal of the Norris-LaGuardia anti-injunction law in case of unions which violate any provisions of the act. It is fully expected that the Senate will not concur without considerable amendment, probably preserving such reasonable provisions as those concerning registration of all unions, including full details of their financial management, election policies etc., a compulsory "cooling off" period after strike notice, and Federal supervision of strike voting.

THE PRICE-CONTROL QUESTION

Every pre-war and war period has witnessed the phenomenon, technically termed inflation, which the man

in the street and the woman in the market knows as higher cost of living. Rising prices and rising wages never do, as a matter of plain fact, cancel themselves out. The wage earner is caught by the lag in wage increases; the "fixed income" groups are particularly hard hit. These latter, it should be noted, include a comprehensive cross-section of the population, not only the "upper class" coupon clipper but also many "middle class" salaried persons and annuitants and the "lower class" recipient of various pensions, social security payments, and benefits of many kinds. In addition, of course, rising prices of basic materials would considerably increase the cost of the defense program, since most of the contracts were let on a "cost-plus-fixed fee" basis. The Office of Price Administration created in the spring has proved fairly successful in controlling price rises on basic defense materials by means of voluntary agreements among members of various industries, and certain commodities whose price is closely related to these materials have not become notably more expensive. Food, however, has continued to rise at an alarming rate. At the beginning of December, basic foodstuffs were up 61% from "pre-war" prices. Wholesale prices were up 34%, and retail prices averaged 19% higher with certain items considerably more than this percentage.

The over-all effects of inflation have distressed Administration leaders since early in the year, and specific administration-sponsored price control legislation has been before Congress since summer. After interminable hearings and discussion, while prices continued to soar, the House finally on Nov. 28 passed, by a vote of 224-161, a version of the bill which amounted to an Administration defeat. An administrator was created who had power to set ceiling prices on commodities but the effectiveness of the control was vitiated in several ways. In the first place, a five-man board of review with power to overrule the administrator's decision was set up. In the second place, Congress

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refused to include permission to license businesses and to revoke licenses for failure to comply with price-ceilings. Thus the executive branch of the system was deprived of any means of enforcing its rulings, and enforcement was left to the slow and precarious process of court action. In the third place, rents were made subject to control only in defense areas.* In the fourth place, the farm bloc managed to limit farm product ceilings so completely as to vitiate their force. The bill directs that the highest among the three following alternative figures must be selected as the ceiling on any agricultural product: 110% of parity (i.e. of the average price existing in the base period 1909-1914); the average for the

* On Dec. 2 the President signed an act which created an Administrator of Rent Control for the District of Columbia, with power to set rent ceilings. The act itself provides an initial ceiling—the rate in effect on Jan. 1, 1941—which went into effect in January, 1942.

period 1919-1929; or the price as of Oct. 1, 1941. In some cases such a figure would be 200 or 300% of 1941 prices. Moreover, although Administration leaders had not asked for power to control wage increases, many experienced economists felt that the failure to include such power in the bill considerably lessened its effectiveness as an inflation control measure.

There seems little question that the Senate will favor a stronger measure. Under consideration at the end of the year was a version which vested power in a single administrator and which provided for licensing of wholesale and retail establishments. However, revocation of these licenses could be obtained by the administrator only through court action.

APPROPRIATIONS

On Jan. 8, 1941 the President submitted to Congress the \$17,500,000,000 budget for the fiscal year 1941-1942,

APPROPRIATIONS—1941-1942 FISCAL YEAR

Civil	Date	Amount
Independent offices.....	April 5	\$1,415,000,000
War Department (civil).....	May 23	228,601,828
Treasury.....	May 31	843,294,199
Post Office.....	May 31	304,330,185
State Department.....	June 28	21,499,240
Commerce Department.....	June 28	179,009,100
Justice Department.....	June 28	66,307,500
Judiciary.....	June 28	12,334,160
Interior Department.....	June 28	188,325,923
Emergency Relief.....	July 1	910,905,000
Agriculture Department.....	July 1	1,060,500,063
Labor and Federal Security Agency.....	July 1	1,195,861,940
Legislative.....	July 1	54,183,106
District of Columbia.....	July 1	25,002,256
Defense		
Naval supplemental—1941.....	Jan. 31	\$ 509,000,000
Maritime Commission.....	Feb. 6	350,000,000
Military supplemental—1941.....	Feb. 13	175,000,000
Urgent Deficiency—1941.....	March 1	393,687,775
Fourth Supplemental National Defense—1941...	March 17	1,525,000,000
Defense aid supplemental.....	March 27	7,000,000,000
First Deficiency.....	April 1	191,500,000
Fifth Supplemental National Defense—1941....	April 5	4,390,000,000
Naval Establishment.....	May 6	3,446,685,144
Additional Urgent Deficiency.....	May 24	173,749,630
Defense Housing.....	June 28	150,000,000
Military Establishment.....	June 30	10,384,821,624
Second Deficiency.....	July 1	1,041,444,529
T. V. A.....	July 16	40,000,000
Naval.....	July 29	585,000,000
Naval.....	Aug. 11	1,000,000
Naval.....	August	16,000,000
First Supplemental National Defense—1942....	Aug. 25	7,596,948,000
Second Supplemental National Defense—1942...	Oct. 28	6,161,467,229
Third Supplemental National Defense—1942....	Dec. 15	10,077,077,005
Defense housing.....	Dec. 24	512,000,000

commenting that "it is dangerous to prepare for a little defense; it is safe only to prepare for total defense." He pointed out that 62% of the proposed expenditures was for national defense. In the case of some "fixed" items—interest, pensions, insurance, and certain Federal grants to states—reduction is not a matter of executive discretion, while he deemed the continuance of the social security program, of a substantial part of the agricultural program, and of work relief, indispensable to "a people of health and stamina . . . an economic and social system functioning smoothly" which in turn are indispensable to total defense.

This estimate, as the President mentioned, did not cover the program of aid to other nations, nor as events proved, did it adequately meet our own defense needs for 1941. By Oct. 1, Budget Director Smith had revised the defense estimates for the fiscal year 1941-1942 upwards from \$10,000,000,000 to \$18,000,000,000. With American entry into active war it is impossible to suggest how many more upward revisions will be necessary. The list of appropriations in defense items therefore bears little resemblance to the budget estimates. Thirteen billion dollars has been appropriated for lease-lend implementation, \$40,000,000,000 appropriated or authorized for American defense. The civil appropriations follow estimates fairly closely. The general deficiency appropriations were very largely for defense purposes, and have consequently been listed under that head. (For national budget tabulations, see "National Finance and the Public Debt," p. 205.)

REVENUE AND FINANCING

Apprehensive of inflation, the Federal Reserve Board issued on Jan. 1, 1941 certain recommendations for Federal financial policy which it considered would check inflationary tendencies. It suggested the cessation of Presidential power to devalue the dollar and of Treasury power to issue additional paper money and to issue money on the basis of foreign silver

purchased. It recommended that the government adopt a policy of selling Federal securities only to individuals or corporations and not to banks. It also recommended tax increases designed on a long range basis to achieve a balanced budget when full national economic capacity was reached. At the same time it suggested the necessity of raising the statutory debt limit. President Roosevelt in his budget message recommended higher taxes in order to meet increased expenditures. He pointed out that, according to Budget Bureau estimates, the \$49,000,000,000 debt limit would be passed by July 1, 1941 and, in view of the \$9,000,000,000 1941-2 deficit, the public debt by July 1, 1942 would be at least \$58,000,000,000. Minimizing the danger of a large public debt so long as it was adequately insured by national ability to meet interest charges, etc., pointing out the artificial nature of statutory debt limits when, as a matter of fact, Congress through appropriation and tax legislation always controlled the size of the debt, Mr. Roosevelt seemed to be suggesting the removal of all debt limitation. Both the President and the Secretary of the Treasury had advocated that new issues of defense bonds be relieved from the existing necessity of earmarking certain taxes for bond retirement.

Out of these various suggestions Congress evolved its own financial policy in which there were five major points.

1. The President's powers of monetary stabilization and dollar-weight control were renewed until June 30, 1943.
2. In spite of considerable Republican oratory about the 8-year orgy of spending and the three-fold increase in the public debt, the "Public Debt Act of 1941" raising the debt limit to \$65,000,000,000 was speedily passed in both houses without a record vote and was signed by the President on Feb. 19.
3. The same act authorized a new series of savings bonds and treas-

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ury certificates, to be sold on either discount or interest-bearing basis, with maximum interest rates of 3%. The law specified that the interest—or increment computed as interest—could be made taxable. Permission was also given to set an annual limit on individual purchases, permission which the Treasury speedily utilized in its new defense series. Finally, the Administration requested to relieve the new issue of the tax-earmarking-for-redemption provision of earlier issues was granted.

4. Early in March the President signed the "Excess Profit Tax Amendment of 1941" designed to relieve certain hardships resulting from the 1940 act.
5. According to the 1941-1942 budget the estimated total revenue for that fiscal year was \$8,250,000,000 of which about two-thirds would come from income taxes, about one-third from miscellaneous excises. The Revenue Act of 1941, signed by the President on September 20, would increase the former by about \$2,500,000,000, the latter by over \$1,000,000,000. Since of course the new tax rates were not effective till January 1942 these estimated increases are for the calendar year 1942 and will not so substantially increase revenue for the present fiscal year. (For taxation changes, see Div. X, Public Finance and Taxation.)

REAPPORTIONMENT

It will be remembered that the 1940 census revealed certain population shifts which considerably affect Congressional representation. Had the "major fractions" method of apportionment remained in effect, Arizona, Florida, Michigan, New Mexico, North Carolina, Oregon, and Tennessee would have gained one representative, California would gain three. On the other hand, Arkansas, Nebraska, Ohio, Oklahoma, and Pennsylvania would each have lost one representative. Whether this "major

fractions" method was retained or the so-called "equal proportions" formula, advocated by many mathematicians and statisticians, was substituted, certain of these changes were inevitable. California would still gain her three new congressmen; Arizona, Florida, New Mexico, North Carolina, Tennessee, and Oregon would each gain one; Illinois, Indiana, Iowa, Kansas, Massachusetts, Nebraska, Ohio, Oklahoma, and Pennsylvania would each lose one. The practical effect of the change in method thus concerned only one representative and only two states, Arkansas and Michigan. Under the "equal proportions" formula Arkansas would not lose her one and Michigan would not gain one. Certain factors, however, broadened the controversy over apportionment method from a purely local one to a party one. Arkansas is traditionally Democratic, Michigan traditionally Republican. Each party wanted the 435th member of Congress. By a House vote of 210 to 143, the new equal proportions formula was approved. Certain other amendments to the apportionment law of 1929 were also made. These chiefly concerned details of elections pending redistricting of states.

AGRICULTURE

The 1941 Agricultural Appropriation Act again provides \$212,000,000 for parity payments to farmers. Over \$100,000,000 was specified for disposal of surplus commodities with the provision that not more than 25% be devoted to any one commodity. However, stamp plan expenditures are not included within percentage calculations for this limitation.

Five and a half million dollars was appropriated for crop insurance. By another law, the Federal Crop Insurance Act was amended to include cotton as well as wheat, and the authorized fund was increased from \$6,000,000 to \$12,000,000.

The Appropriation Act provided that, under the Bankhead-Jones Farm Tenant Act, \$50,000,000—to be borrowed from the R.F.C.—could be used for loans to facilitate purchase

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of small farms. "Small farms" were defined as those equivalent in value to the average 30-acre farm in the region.

For farm debt adjustment, loans to needy farmers, and rural rehabilitation projects \$64,000,000 was made available, and the R.F.C. was authorized to extend an additional \$120,000,000 for rural rehabilitation loans at 3% and backed by acceptable security.

Authorized R.F.C. loans for rural electrification were increased by \$100,000,000.

One small item is of a potential importance out of all relation to its amount. Seventeen thousand, five hundred dollars was appropriated for expenses involved in American memberships in the International Wheat Advisory Committee, International Sugar Council, and other international bodies considering problems of agricultural surpluses. Every bit of experience in working and improving the delicate mechanisms of voluntary international cooperation is a step toward that ideal "new order" which must evolve if we are truly to "win this peace."

By other bills the Agricultural Adjustment Act was amended (1) to change certain details of corn and wheat acreage allotments, marketing quotas, penalties, etc., (2) to include under it the regulation of interstate and foreign commerce in peanuts.

Congress extended the life of the Commodity Credit Corporation to June 30, 1943 and increased the authorization from \$1,400,000,000 to \$2,650,000,000. The act further provides that when, during the emergency, the Secretary of Agriculture finds an increased quantity of any non-basic commodity (*i.e.* any commodity except cotton, corn, wheat, tobacco, or rice) to be desirable, he may use these funds "through a commodity loan, purchase or other operation" to support a price for the producers of not less than 85% of parity "or a comparable price therefor." The final phrase is intended to apply where production or consumption factors have so changed since the base period that parity prices for that product

would today be unreasonably out of line with other commodities.

RELIEF

In his budget message, President Roosevelt stressed the continuing need for work relief in spite of the enormous rise in employment accompanying the defense program. The "Urgent Deficiency Appropriation—1941" carried \$375,000,000 for WPA, bringing the total for the fiscal year 1941 above \$1,350,000,000. The regular emergency relief appropriation act for the fiscal year ending June 30, 1942 totaled \$910,905,000; \$875,000,000 for WPA, \$25,000,000 for relief distribution of surplus commodities, and smaller amounts for miscellaneous purposes. The 18-month limitation on continuous WPA employment which caused so much controversy in 1940 was again written in. Many provisions obviously aimed at preventing abuse of the work relief program were included: mandatory transmission to Congress of lists of all WPA employees receiving \$1,200 a year or more; limitation of non-relief employees to 10% of total; prohibition of political "blackmail" of WPA workers; the Hatch Act provision forbidding all political activity of Federal administrators or supervisory employees. Certain specifications—75% maximum for Federal contributions to non-Federal projects, \$100,000 limit on Federal contribution to any one project, 40-hour week for workers on WPA projects—were relaxed in cases where the projects were military, naval, or of emergency defense character.

INTERNATIONAL RELATIONS

International relations during 1941 fell under two major headings; the first, which dominated the scene until December, was aid to the nations warring against totalitarianism; the second was active participation in the war.

In the introduction to this article there was a brief résumé of the history of the lease-lend bill which finally became law late in March. Entitled "an act to promote the defense of the

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United States" it authorized the President to assist in the following ways "the government of any country whose defense the President deems vital to the defense of the United States:" (a.) authorize the manufacture of any defense articles for such countries; (b.) "sell, transfer title to, exchange, lease, lend, or otherwise dispose of" defense articles to such governments; (c.) contract with public or private agencies to "test, inspect, prove, repair, outfit, recondition or otherwise to place in good working order" any defense article for such countries. The act further provides that "the terms and conditions upon which any such foreign government receives any such aid . . . shall be those which the President deems satisfactory, and the benefit in the United States may be payment or repayment in kind or property, or any other direct or indirect benefit which the President deems satisfactory." Certain limitations and exceptions were included. Of course the manufacture of defense materials remained contingent upon Congressional appropriations. (For further details, see Lease-Lend Law," p. 38.)

NEUTRALITY

The revision of the Neutrality Act in November was to a large extent another step in our program of aid. Whereas the restriction involved in the original act ran counter to the historic American policy of maintaining our right to freedom of the seas, and the revision consequently might have been deemed merely a restatement of our traditional principle, the decision actually centered around the question of whether or not we were to implement effectively our avowed purpose of seeing that supplies reached the nations which we had voted to assist in their struggle. This fact explains why the Congressional controversy focused on the permission for American ships to go into combat areas. Arming our merchant ships might be classed merely as a warning that we did not intend to be driven from all trade channels, and this gesture did not arouse "isolationist" an-

tagonism as did the repeal of the other restrictions which more clearly involved the question of direct aid to Great Britain and her allies.

WESTERN HEMISPHERE POLICY

Our Western Hemisphere policy crystallized earlier in the year. A "Monroe Doctrine" resolution had been under discussion during 1940, but House-Senate differences prevented its passage. In the early months of 1941 the 77th Congress comprised these difficulties, and on April 10 the President signed an act stating our determination not to recognize any transfer nor to acquiesce in any attempt to transfer "any geographic region of this hemisphere from one non-American power to another non-American power." The act further provides that if such an attempt should appear likely, the United States shall confer with other American republics as to the proper defensive steps to be taken "to safeguard the common interests." Under existing circumstances the chief danger spot is Martinique. Recently a naval accord with Vichy France seems to have relieved some of the tension concerning this island.

Late in November, 1940, an "Inter-American Coffee Agreement" was signed by the United States and several coffee-producing Central and South American countries. In April this agreement was implemented by a law recognizing coffee quotas, various marketing provisions, etc. Partly "good neighbor" policy, partly hemisphere defense was the act which permitted a certain number of appointees from each of the other American republics to take the naval training course at Annapolis. Appointments in the United States Navy were not to be conferred, however, at the completion of the course.

FLOOD CONTROL

The President in his budget message recommended a reduction in civil public works, particularly river and harbor projects, in order to release men and materials for defense work, to release money for emergency needs, and to provide part of a post-defense

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public works program designed to ameliorate the economic slack which will inevitably accompany the cessation of war activities. His budget recommendation for non-military war department public works was \$150,300,000 (exclusive of \$45,500,000 for departmental expenses), a reduction of about \$75,000,000 from the 1940 recommendation. Congress, although its total appropriation of \$228,000,000 did not greatly exceed this figure, actually provided more for these purposes than it did in 1940. In August it approved a few new large flood control projects—basins of the Thames, Oswego, Colorado, Brazos, and Tennessee rivers—and several small ones. It also increased the authorizations for large partially completed flood control projects in the basins of the Connecticut, lower Mississippi (including the Red River backwater area), Arkansas, Ohio, Missouri, Sacramento-San Joaquin, and Willamette rivers.

HOUSING

The life of the FHA was extended for another three years, and the amount of mortgage insurance which it could have outstanding at one time was increased from \$4,000,000,000 to \$5,000,000,000. The limit on individual insurance loans on repairs and improvements, previously \$2,500, was raised to \$5,000. The Federal Housing Administrator's salary was increased from \$10,000 to \$12,000.

The legislature of Alaska was empowered to create a public authority for slum clearance, low income group housing, and defense housing.

The defense Housing Act of 1940 was amended so as to increase authorized expenditures from \$150,000,000 to \$300,000,000, and another \$165,000,000 was allocated for this purpose in the additional urgent Deficiency Appropriation Act for 1941.

In June, another amendment to the defense Housing Act was passed which empowered the Federal Works Administrator to "plan, construct, repair, extend or lease" such public works as schools, water-works, sewers, garbage and sewage disposal facili-

ties, water purification systems, hospitals and recreational facilities, when it is found that the health, safety, and welfare of people engaged in defense work are affected by the lack of such facilities. The Federal Government, however, is to act only when local governments are unable to provide for the needs of the population, or unable to do so without excessive taxation or borrowing. Even then Federal loans or grants are considered preferable, direct Federal action as an alternative. The law states that existing facilities shall be given preference if expansion or improvement is at all possible. Maintenance and operation is to be Federal only when local agencies are unwilling or obviously unable to handle the facilities even with Federal loans or grants, and in no case is the Federal Government to exercise any supervision or control over schools erected, expanded, or maintained under the act. One hundred fifty million dollars was appropriated to carry out the above provisions.

On Dec. 24 the President signed a \$512,000,000 Appropriation Act designed largely to provide housing, school, and sanitary facilities for communities which are faced with the problem of providing for large numbers of defense workers, \$300,000,000 being allocated for more than 16,000 housing units, and \$150,000,000 for schools, water systems, etc. By the end of the year \$600,000,000 had been appropriated for defense housing and another \$300,000,000 for other community facilities.

INTERSTATE COMPACTS

In 1935 an interstate compact to conserve oil and gas was first signed by several oil producing states and sanctioned by Congress. Once again in 1940 it received Congressional approval for extension and renewal. Signed by Oklahoma, Texas, New Mexico, Kansas, Illinois, Colorado, Michigan, Arkansas, Louisiana, New York, and Pennsylvania, the compact aims to control wasteful operation of oil wells.

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COAL

The provisions of the Bituminous Coal Act of 1937 were extended to 1943 as were the bituminous coal taxes. The same act establishes an office of the Bituminous Coal Consumer's Counsel within the executive branch. This office is to take over the work which was originally performed by the consumers' counsel of the National Bituminous Coal Commission but which was transferred to the Solicitor of the Interior Department by Executive Reorganization Plan No. II in 1939.

The Secretary of the Interior was directed to make, through the Bureau of Mines, inspections and investigations of coal mines "the products of which enter (interstate) commerce or the operations of which substantially affect (interstate) commerce." Causes of accidents, causes of occupational disease, safety conditions, etc. are to be investigated, and on the basis of the resulting information the Secretary is to submit a report to Congress accompanied by recommendations for legislative action. He is directed also to publish the material with recommendations for possible prevention of amelioration of diseases and accidents, and he is empowered to allocate funds granted to him for promotion of health and safety in coal mines according to the findings of this survey.

EXECUTIVE REFERENCE BUREAU

After much acrimonious discussion, and many charges of "executive propaganda agency," Congress finally passed an act making permanent, with an annual appropriation of \$1,500,000, the Office of Government Reports which had previously been a temporary agency authorized from year to year by executive order. According to the bill the office is designed to provide a central clearing house for inquiries and complaints from citizens, citizen groups, and state or local governments; to collect and distribute information about executive departments and agencies for the use of Congress, administrators, and the public; to assist the President on special

problems by facilitating clearance of information between the Federal Government and the state and local governments; and to keep him currently informed of public opinion in various groups.

CIVIL SERVICE

Congress in 1941 complied with the suggestion, long advanced by personnel experts, that a regular system of promotions within civil service grades would be a desirable thing. The 1941 law amending the Classification Act of 1923 contained two major provisions:

1. It provided that civil service employees, on a per annum basis and permanently employed, who have not reached the maximum compensation rate within their grade shall be advanced, if their work is of satisfactory or superior quality, to the next higher rate within the grade after 18 months service in grades where increments are \$60 or \$100, after 30 months service in grades where increments are \$200 or \$250. One additional increase per period within the grade is possible where work has been of especially meritorious character.
2. It provided for greater differentiation of rates within certain of the higher grades. Thus the rates for grades 14 and 15 within the clerical, administrative, financial classification and for grades 7 and 8 within the professional and scientific classification—which were formerly \$6,500, \$7,000, \$7,500, \$8,000, \$8,500, and \$9,000—are now \$6,500, \$6,750, \$7,000, \$7,250, \$7,500, \$8,000, \$8,250, \$8,500, \$8,750, and \$9,000.

THE DRAFT LEGISLATION

At the end of May the Selective Service Act of 1940 was so amended as to broaden the exemptions. Excluded from the provisions were those who had served, or were serving, three-year enlistments in the Navy, Marine, or Coast Guard, those who had been in the National Guard or naval or marine reserves for six

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years, and certain other groups who had received training or performed active duty. Again in mid-August this act was amended, this time to exempt all men over 28 from call and to permit as soon as practicable "honorable release" of those over 28 who had already been inducted. Almost at the same time, however, the Service Extension Act of 1941 was passed. This authorized the President to extend the period of service for selective service draftees, reserves, and National Guardsmen. Although the extension in the case of draftees was limited to a total of 18 months, the act specifically states that a further extension may prove necessary. An addition of \$10 a month to the pay of all those held past 12 months service was authorized. The limitation of men in active training and service which was set at 900,000 in the 1940 act was suspended for the duration of the emergency.

Of course the Draft Act passed on Dec. 19 (in the form of amendments to the Selective Service Act) nullified all previous legislation on the subject. It called for registration of all men between the ages of 18 and 65—with liability for military service for all between 20 and 45. The final form of the act was the result of House and Senate compromise. The House, revolting against Administration request for a 19 to 45 law, refused to lower the age limit below 21. The Senate by a vote of 79-2 accepted the Administration plan, and the 20-year figure was a compromise. Of the 41,000,000 who will register, about 7,500,000 men will probably be fit for army or navy service. About 1,200,000 additional men will reach the age of military service annually. Experience with the previous selective service law showed that less than one-fifth of the registrants remained eligible after eliminations because of physical disability, dependents, or industrial indispensability. However, it may be that the existence of dependents will not remain a reason for deferment and that the government will develop some system of support for the families of men drafted into the service.

OTHER MILITARY LEGISLATION

Before the declaration of war an act to "authorize a more expeditious procedure to vitalize the active list of the army" provided that the Secretary of War can, during the emergency, remove any officer from the active list if his performance warrants removal and if such removal is recommended by a board of five general officers. The removed officer has the privilege of demanding review of the dismissal, and if he has served actively for over seven years he is entitled to retirement pension based on the usual computation.

The President was empowered to make temporary appointments of qualified persons as officers in the army without specific commissions to any particular component. These "emergency" officers would be subject to active duty and would receive pay at the rate of a Reserve Officer of the same rank.

The fifth supplementary national defense appropriation of 1941 signed on April 5, provided \$4,333,333,333 chiefly for the army, and was designed to be part of a program of equipping an army of 4,000,000 men. The \$10,000,000,000 military Appropriation Act was signed June 30; on Aug. 25 came the first supplemental national defense appropriation for 1942 with another \$3,500,000,000 for the army. And finally on Dec. 15 the \$10,500,000,000 appropriation carried \$5,000,000,000 for the army. This final act provided for an army of more than 2,000,000 men and equipment for 1,200,000 additional.

NAVY PERSONNEL

Legislation concerning the naval establishment falls under three general headings: personnel, bases, vessels. The navy air corps with the army air corps, will be considered under a separate heading.

In January the number of midshipmen who may be appointed was increased. In late April the authorized enlisted strength of the active regular navy was raised to 232,000 and authorization was given the President to raise the number to 300,000 when

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the emergency required it. The authorized enlisted strength of the active marines was increased to 20% of the navy. Shortly thereafter the naval Appropriation Act increased the authorized enlisted naval strength to 258,000. By the end of the year the Senate had approved and the House was considering an increase of the Navy's authorized enlisted strength to 500,000, that of the marines to 104,000. The aim is a naval force of a million men—500,000 regulars and 500,000 reserves—to man our two-ocean navy.

Later the President was given power, if he should deem it conducive to national interests, to reduce the Naval Academy course from four to three years, with accredited "graduation" to accompany completion of the shortened course. This power expires in 1945.

In August the navy and marine corps were permitted to provide for 2-, 3-, and 6-year terms of enlistment, in addition to the regular 4-year term. The Secretary of the Navy was at the same time empowered to extend the period of service for enlisted men when national defense necessitates such action.

NAVAL BASES

In March, 1941 two acts were signed which authorized extensive naval construction projects at various naval bases, naval air stations, etc., in the continental United States, Alaska, Puerto Rico, the Canal Zone, and the Pacific Islands. Finally, after three years of urgent Presidential solicitation—and as we now know three years too late—Congress finally consented to take some steps for the fortification of Guam. Except for the Philippines, this island was the westernmost of our outposts and it possessed only one small naval station, and an inadequate sea plane base. No satisfactory air field existed nor was the reef strewn harbor practicable for naval purposes. How far the work of improvement had progressed before this island was lost to the Japanese is not known.

At the same time Congress provided

money for naval air stations at Trinidad, Newfoundland, Bermuda, British Guinea, Jamaica, Antigua, Saint Lucia, and the Bahama Islands.

In July began a series of acts authorizing further naval shore establishment projects. These included naval air stations, storehouses, dispensaries, instruction buildings, magazines, and housing facilities.

NAVY SHIPS

During January \$500,000,000 was appropriated for the construction of naval vessels and naval ordnance, munitions, armor, etc. At the same time an expenditure of \$400,000,000 was authorized for the construction of 400 small craft suitable for patrol duty, local defense, escort work, salvage and towing.

The naval Appropriation Act provided some of the funds necessary to carry forward the production of 300 new fighting ships and 400 other craft. It was estimated that \$6,000,000,000 more would be necessary before these projects were completed. Later in May the Navy was authorized to acquire or construct 550,000 tons of auxiliary vessels in addition to any previously authorized, and in November Congress authorized construction or acquisition of 400 miscellaneous light craft suitable for local defense, patrol boats, minesweepers, etc. In July, August, November and December additional naval appropriations were passed to implement the expanding naval program. (See "Naval Construction and Equipment," p. 310.)

THE COAST GUARD

Though still under the Treasury Department, the United States Coast Guard has become integrated to some extent with naval defense programs for the emergency period. Early in the year the Coast Guard Auxiliary and the Reserve Act of 1941 reorganized the Coast Guard Reserve and created a Coast Guard Auxiliary open to citizens of the United States and its territories (except the Philippines) who own motorboats or yachts. Both the citizens and their craft remain

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subject to call for duties incident to the saving of life and property and other functions of the Coast Guard. When on duty the craft are to be considered as public vessels but remuneration is to be made only for actual expenses on duty.

In addition to its regular appropriation the Coast Guard received another \$3,000,000 for fiscal 1942 under the second Deficiency Appropriation Act and at the same time Congress authorized the use of \$47,000,000 for construction of three additional and 10 replacement vessels. Two weeks later, another law authorized 13 more Coast Guard cutters, three of which were to be especially designed for ice breaking in Arctic regions.

MERCHANT MARINE

Trade is an indispensable part of defense, and Congress throughout the year realized the urgency of replenishing our merchant marine strength under existing circumstances. In January it appropriated for the Maritime Commission \$350,000,000 to be used either for the emergency construction of ocean-going cargo ships or for the expansion of essential plant facilities for such construction.

Early in June the President was authorized to "purchase, requisition for the emergency period, charter, requisition the use of, or take over title to or possession of" any foreign merchant vessel lying idle in United States waters (including the Philippines and the Canal Zone) which is essential to national defense. Provisions for just compensation are included, and the act states that vessels belonging to other nations and used "for sovereign purposes" can be taken only by purchase or charter. Naval funds may be used to repair or recondition vessels thus taken over.

The Maritime Commission was given further broad powers to charter or purchase additional domestic or foreign vessels necessary for transportation of foreign commerce or of commodities essential to national defense.

In July the Maritime Commission was empowered when, in its opinion,

the interests of national defense or maintenance of essential supplies made it advisable so to do, to issue "warrants" to certain vessels. These warrants would carry priority privileges in dockage, loading, storage of cargoes, fueling, overhauling, repairing, etc. Whereas certain conditions for obtaining these privileges may be specified, such as type of cargo, routes, and rates, the warrants do not involve any direct government management.

The first Supplemental National Defense Appropriation Act signed on Aug. 25, assigned another \$698,000,000 to the Maritime Commission for construction of merchant vessels, or necessary plant facilities and authorized the expenditure of a further \$1,000,000,000. These sums were in addition to the construction fund appropriation of \$160,000,000 and the contract authorization for \$180,000,000 contained in the regular Maritime Commission appropriation in April. (See "The Merchant Marine," p. 534.)

AIR FORCE

The grade of "aviation cadet" was created in the army, navy, and marine air forces. After being trained at one of the training schools, the cadet would receive a commission in the army, navy, or marine air corps reserve. The trainee must, however, agree to accept his commission and to serve three years of active duty for the army, four years in the case of the navy and marines.

The Secretary of War was empowered to assign enlisted men or others in active army service to be trained as aviators. During the instruction period, the government pays the premiums on \$10,000 life insurance for each trainee.

Another act provides that officers and men who are not in the "flying pay" status, and who become attached to parachute units or whose duties include parachute jumping, will receive additional pay—\$100 a month additional for officers, \$50 a month extra for enlisted men.

In April the fifth Supplemental National Defense Appropriation for

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1941 authorized 3,600 army bombers and provided funds to accelerate the army air corps training program, the goal of which is 30,000 pilots a year. The army supply bill provided \$3,250,000,000 for army air craft. By early December Congress had appropriated money for over 25,000 combat planes for the army, although General Marshall said that at that time the army air corps was operating with only about 3,600 planes.

The naval appropriation allocated \$500,000,000 toward naval aircraft increases. At that time, in May, the Navy had on order over 7,000 new planes. Subsequent laws increased the amount available for airplane expansion, and the December Appropriation Act provided \$950,000,000 for naval aircraft. A substantial portion of the army's \$1,000,000,000 for military buildings was apportioned to the development of air fields. It was planned to begin training of 150 new air squadrons.

When on Dec. 19, the House-Senate conference committee agreed on the "20-45" draft law, it was said that army plans call for detailing 2,000,000 men to aviation. Of these perhaps only 100,000 would actually serve as regular pilots; the remainder would serve as ground men or have auxiliary air ratings.

MATERIEL

The 1940 "Act to expedite national defense" was amended to extend priority not only to army and navy contracts but also to any other contracts or subcontracts which the President deems "necessary or appropriate to promote the defense of the United States." This amending act further prescribes that "whenever the President is satisfied that the fulfillment of requirements for the defense of the United States will result in a shortage in the supply of any material for defense or for private account or for export, the President may allocate such material in such manner and to such extent as he shall deem necessary or appropriate in the public interest and to promote the national defense."

In June the R. F. C. was empowered to "create or organize" at any time prior to July 1, 1943 corporations with power (a) to "produce, acquire, sell or otherwise deal in" strategic materials; (b) to purchase, lease, build or expand plants and equipment for manufacture of strategic materials, arms, ammunition, etc.; (c) to lease, sell, or otherwise dispose of land, plants, and machinery to others to engage in such manufacture; (d) to engage in such manufacture itself, if the President finds that it is necessary for a government agency so to do; (e) to produce, lease or purchase railroad equipment and commercial aircraft and to sell lease and dispose of these; (f) to acquire and operate, or to acquire and sell or lease to others, aviation training facilities. The R. F. C. authorization was increased by \$1,500,000,000 to cover the possible needs of this act.

If the President finds that the construction, completion, or extension of a pipe line for interstate transportation of petroleum is necessary for national defense he has been empowered to assist a private undertaking of the work by granting land and rights-of-way and by making government loans. Where such assistance is extended, the government may set conditions of construction which best suit the needs of national defense. If private enterprise is unwilling or unable to undertake such work, the President is further empowered to designate some government department or agency to construct and operate the pipe line, although government operation is limited by the act to no more than 12 months after the termination of the "unlimited emergency" proclaimed on May 27, 1941.

By October Congress had granted power to the executive to requisition, with fair and just compensation, military or naval equipment, supplies, munitions, machinery, and any tools or material necessary for servicing these which are urgently needed for defense if all other means of securing these have failed. The permissive legislation, however, specifies that

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any owner who is dissatisfied with the compensation paid may sue in the Court of Claims or in any district court. It also states that the act shall not be construed to interfere with the right of keeping arms, and finally it provides that the power of requisition shall not be used in connection with machinery or equipment in actual use which is necessary to the operation of any operating factory or business.

SPIES AND SABOTEURS

During 1941 there was actually less legislation directed against domestic spies and saboteurs than in 1940. Undoubtedly 1942 will show a marked increase in such bills. During December favorable attention was being given in the House to a bill specifying the death penalty for defense sabotage.

Early in the year Representative Dies secured, by the overwhelming vote of 353 to 6, House approval for a 15-month continuation of his committee to investigate subversive activities.

All prospective Federal employees are now routinely investigated by the Federal Bureau of Investigation. Late in June the Department of Justice Appropriation Act allocated \$8,750,000 to the F.B.I. and specified that at least \$100,000 be used to investigate Federal employees suspected of subversive activities or of membership in subversive organizations. The Second Deficiency Appropriation Act, signed by the President two days later, carried an additional "emergency" appropriation of \$5,500,000 for the F.B.I.

In August, Congress authorized a "plant protection force," to be headed by a civilian director but under the Office of Naval Intelligence, whose function it would be to investigate espionage, sabotage, etc. in connection with naval establishments. An appropriation of \$1,000,000 was made for the purpose.

MISCELLANEOUS DEFENSE LEGISLATION

Alien Visas.—A number of miscellaneous laws arising out of the de-

fense situation were passed. In June, American diplomatic and consular officials were empowered to refuse visas to aliens known or "reasonably suspected" to be planning activities dangerous to the United States. The act, however, provides that all such cases must be immediately reported to the Secretary of State for final decisions.

Home Guards.—The privilege of establishing "Home Guard" units when the National Guard is in Federal service, which was given to the states in 1940, was extended to Hawaii, Alaska, Puerto Rico, and the Canal Zone.

Prostitution.—Engaging in, or in any way abetting, prostitution within a "reasonable distance" of military and naval camps or bases was made a Federal offense punishable by fine or imprisonment.

Foreign Filing of Patents.—The 1940 law prohibiting foreign publication of inventions when such action would be detrimental to the public interest was further stiffened. The amendment prohibits the filing in any foreign country of an application for patent or for registration of any model, invention, or industrial design until the U.S. Commissioner of Patents issues a license permitting such application. Unauthorized applications or the publication of critical information about inventions is punishable by a \$10,000 fine or imprisonment.

Prize Vessels.—It is interesting to note that the old laws concerning "prize vessels" were amended so as to include aircraft within the definition of "vessels."

Foreign Vessel Anchorages.—An act passed in November empowers the captain of a port, the local Coast Guard commander, or, within his area, the Governor of the Panama Canal, so to control movements and anchorage of all foreign and domestic vessels in and around harbors as best to secure the safety, security, and freedom of naval vessels in the vicinity.

Highways.—The Defense Highway Act of 1941 was designed to authorize

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and facilitate the construction of such highways, connections, etc. as are necessary for the speedy achievement of a "strategic net work of highways" for military purposes as approved by the Secretary of War. An additional \$25,000,000 may be allocated to the states under the Federal Highway Act for this emergency purpose, and another \$25,000,000 may be allocated to them without regard to the ordinary conditions. The second grant is to be used for repair of defective bridges and similar critical deficiencies. Finally, the act authorizes \$150,000,000 for use, without regard to apportionment among the states, by the Federal Works Administrator on construction and improvement of access roads to military and naval reservations, defense industries, sources of raw materials, and other areas vital to defense.

Hydroelectric Power.—Much of the housing legislation was definitely related to the defense situation. T.V.A. received, in addition to its original \$80,000,000, a supplementary \$65,000,000 for the construction of two more hydroelectric projects and two more storage projects on the Hiwassee river for the commencement of the new Fontana dam and for the installation of additional generating units in existing plants. Unquestion-

ably the enormously increased demand for power which has accompanied defense production dictated this further appropriation at this time.

Labor and Public Health.—The Labor Department appropriation included \$96,500 for a study of "post defense labor problems"; the Federal Security Agency state grants included over \$100,000 earmarked for costs of "defense education and training" of various sorts; public health appropriations soared with the new defense problems to be faced; NYA received, in addition to its basic \$86,000,000, another \$57,000,000, to provide employment of a nature "calculated to train for defense occupations."

War Powers.—Climax was the war powers—censorship bill signed on Dec. 18, which forbids trading with the enemy, revives the office of alien property custodian to handle some \$7,000,000,000 in Axis-owned property in the United States, eliminates the requirement of competitive bidding on contracts where it still exists, waives performance bonds and authorizes progress payments on contracts, authorizes extensive executive department reorganization in the interest of wartime efficiency, and provides for censorship of international communications: cable, radio, and mail.

THE LEASE-LEND LAW

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PRESIDENTIAL RECOMMENDATION

Declaring in his address to Congress on Jan. 6, 1941 that the United States Government was committed to full support of the nations defending democracy and keeping war away from our hemisphere, President Roosevelt asked Congress for authority and for funds to manufacture munitions and war supplies of many kinds to be turned over to those nations. Realizing that these peoples would not be able immediately to

pay cash for weapons of defense, the President recommended that we make it possible otherwise for them to continue to obtain war materials in the United States. For what we should send abroad, we should be repaid, after the close of hostilities, in similar materials, or if we chose, in other goods which these nations produce and which we need.

At a press conference in which he discussed the introduction of the Lease-Lend Bill in Congress, President Roosevelt emphasized the need

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for swift action in the passage of the desired legislation. He said he did not want the power apparently granted in the bill but someone had to have it so that quick action could be taken. The benefits of the new program, he stated, were to be open to Latin American countries and to all democracies resisting aggression in the world.

THE LEASE-LEND BILL IN CONGRESS

The Lease-Lend Bill was introduced simultaneously in the Senate and House on Jan. 10, 1941. Senator Barkley (Ky.), who introduced it in the Senate, explained that the bill simply translated into legislative form President Roosevelt's policy of making this country the arsenal for the democracies and sought to carry out his pledge to send to these countries an ever increasing number of ships, planes, tanks and guns. Consideration of the bill, which bore the designation of H.R. 1776, lasted two months. Senator Ellender (La.) endeavored to include an amendment which would have definitely restricted the use of American armed forces outside the Western Hemisphere. While this amendment was not accepted, the Senate Committee on Foreign Relations, in urging passage of the bill, declared that it contained "no authority for sending American troops, under any circumstances, to fight on foreign soil or waters." The Committee expressed the conviction that the welfare of the United States could best be served by a foreign policy based on the principles of striving to stay at peace with all the world, and on supplying effective material aid to those countries whose defense is vital to our own, which principles would be served by passage of the Lease-Lend Bill. The Committee also opposed an amendment which would have named specifically all the countries to or for whom defense articles and defense information might be supplied or procured. Since no one could predict the course which the war might take, the members of the Committee thought it best to trust

the President with responsibility to act swiftly in safeguarding the best interests of the nation. The bill finally passed the Senate by a vote of 60 to 31 and the House by 317 to 71. It received the President's approval on March 11.

PROVISIONS OF THE LEASE-LEND LAW

The Lease-Lend Law legalized President Roosevelt's announced policy of making the United States the arsenal of democracy by authorizing him to "sell, transfer title, exchange, lease, lend, or otherwise dispose of," whatever defense articles he should choose. These defense articles could be sent to "any country whose defense the President deems vital to the defense of the United States." Defense articles, under the law, included any weapon, munition, aircraft, vessel, or boat; any machinery, facility, tool, material, or supply necessary for the manufacture, production, processing, repair, servicing, or operation of any defense article; any component material or part or equipment for any such article; any agricultural, industrial, or other commodity or article for defense. The President might also transmit to besieged democracies "defense information," defined as "any plan, specification, design, prototype, or information pertaining to any defense article." No limitation was placed on the use to which recipient nations might put these articles other than that they would not undertake to transfer them to any other country without the consent of the President.

The question whether the act conflicted with existing statutes was answered by the provision that "notwithstanding the provisions of any other law, the President may, when he deems it in the interest of the national defense, authorize the Secretary of War, the Secretary of the Navy, or the head of any other department or agency of the Government to manufacture in arsenals, factories, and shipyards under their jurisdiction, or otherwise procure," to the extent funds are made available or contracts are authorized by Con-

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gress, any defense article for the government of any country whose defense the President deems vital to the defense of the United States.

While the United States would pay for the articles, eventually the recipient nations might make repayments, depending on the terms imposed by the President in disposing of the materials. The law appropriated no money, but it authorized an unlimited amount of future appropriations. However, the program became operative immediately because the law authorized the President to dispose of \$1,300,000,000 worth of materials already on hand. The value of the goods was set by the head of the department or agency concerned.

Authority under the law was delegated to the President until June 30, 1943, but it was provided that Congress might terminate it earlier by passing a concurrent resolution declaring that the powers were no longer necessary. It was further provided that, until July 1, 1946, the delegated powers might be exercised to the extent necessary to carry out agreements or commitments entered into prior to July 1, 1943.

Concerning the conveying of cargo ships, the law stated that "nothing in this act shall be construed to authorize or to permit the authorization of conveying vessels by naval vessels of the United States," a provision which meant little since the President as commander-in-chief of the army and navy already possessed this authority. With respect to the transport of materials abroad, the laws said that "nothing in this act shall be construed to authorize or to permit the authorization of the entry of any American vessel into a combat area in violation of . . . the Neutrality Act of 1939."

An important provision of the law was one permitting repair of foreign warships in United States navy yards. Another authorized the President from time to time to promulgate such rules and regulations as might be necessary and proper to carry out any of the provisions of the law. The President was required to transmit at

intervals, but not less frequently than once every 90 days, a report to Congress on the operations under the law except such information as he should deem incompatible with the public interest to disclose.

APPLICATION OF THE ACT

Immediately following his approval of the Lease-Lend Act, President Roosevelt sent a letter to Speaker Sam Rayburn of the House of Representatives stating that it was "the fixed policy of the Government to make for democracies every gun, plane and munition of war that we possibly can," and transmitting an estimate of \$7,000,000,000 as the amount necessary to carry out the provisions of the law. The Appropriation Bill was passed by the House and Senate with little opposition, the House devoting only two days and the Senate one day to debate on it. It was signed by the President on March 27 and a stream of war materials began to flow from our shores immediately.

The application of the lease-lend policy can best be followed through the reports of the President. In his first report, transmitted to Congress on June 11, President Roosevelt stated that, since the passage of the Appropriation Act, \$4,250,000,000 had been allocated to various agencies of the Government to procure the aid authorized and the balance of less than \$2,750,000,000 was being rapidly allocated. The question of shipping was a vital one for the carrying of munitions and food. Two million gross tons of cargo ships and oil tankers were made available to Britain. In addition, \$550,000,000 was allocated for the construction of new ships. Allied ships, including British naval vessels, were being repaired by us in our ports. British pilots were being trained in our schools, and valuable information was being communicated. Large amounts of food, iron, steel, machine tools and other essentials were being sent abroad. "With our national resources, our productive capacity and the genius of our people for mass production," the President

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declared, "we will help Britain to outstrip the Axis powers in munitions of war, and we will see to it that these munitions get to the places where they can be effectively used to weaken and defeat the aggressors." The President's reference to delivery of defense articles indicated a broadening of our policy of assistance to the democracies fighting against aggression.

Three months later, on Sept. 15, the President reported on the ever-widening program of lease-lend aid. After giving further details of the same nature as in his first report, he added that "across the United States and across Africa our plane ferry service is linking the arsenals of America with democracy's outposts in the Middle East." In addition to making our airports available for the training of British pilots, preparations were being made to do the same for the Chinese. Equipment had been supplied for the Yunnan-Burma Railroad and for the Burma Road to facilitate aid to China. While the British Empire had received the bulk of our aid, the President reported that assistance had been extended to China, the Dutch East Indies, and the exiled governments of countries under Nazi domination. These included the Polish troops training in Canada, the Dutch, Norwegians, Greeks, Belgians, and Yugoslavs. For the defense of the Western Hemisphere, material aid had been extended to the countries of Central and South America, and our garrison in Iceland had been strengthened. While stating that supplies were being made available to Russia, the President said that thus far the Soviet Government's purchases here had been made with its own funds through its regular purchasing agency. In concluding this report the President declared that "planes, tanks, guns, and ships have begun to flow from our factories and yards, and the flow will accelerate from day to day, until the stream becomes a river, and the river a torrent, engulfing this totalitarian tyranny which seeks to dominate the world."

SECOND SUPPLEMENTAL APPROPRIATION

On Oct. 28, President Roosevelt approved the second Supplemental National Defense Appropriation Bill for 1942, adding approximately \$6,000,000,000 to the \$7,000,000,000 previously appropriated for carrying into effect the Lease-Lend Law. The President, by executive order dated Oct. 28, established the Office of Lease-Lend Administration in the Office for Emergency Management of the Executive Office of the President. By this order, an administrator, appointed by the President, was authorized and directed to exercise any power or authority conferred upon the President by the Lease-Lend Act and by the Appropriation Acts. However, the master agreement with each nation receiving lease-lend aid, setting forth the general terms and conditions under which each nation was to receive such aid, must be negotiated by the State Department, with the advice of the Economic Defense Board and the Office of Lease-Lend Administration.

LEASE-LEND AID TO SOVIET RUSSIA

In a press release of Nov. 6, President Roosevelt disclosed the fact that Soviet Russia had been extended a credit of \$1,000,000,000 under the Lease-Lend Act. This indebtedness was subject to no interest, and payments were not to commence until five years after the war's conclusion and be completed over a ten-year period thereafter. The hope was expressed that the Soviet Government would make arrangements to sell to the United States available raw materials and commodities urgently needed by us, the proceeds from which would be credited to the Soviet Government's account. Joseph Stalin promised that this would be done.

THIRD REPORT ON LEASE-LEND OPERATIONS

By Dec. 12, when President Roosevelt made his third report to Congress under the Lease-Lend Act, this

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country had become engaged in war against the Axis Powers. The brief message transmitting the report was devoted exclusively to the new state of affairs. The President stated that, as the strategy of the Axis Powers was world wide, ours must be the same. "Underlying the Lease-Lend Act," he said, "was the conception that those who were fighting the aggression of the Axis Powers were fighting our potential enemies. The Axis Powers have now openly declared themselves to be our enemies. We must not only help others to defeat them; we must fight them with all the forces we have and can get. . . . Accordingly we must use the weapons from the arsenal of the democracies where they can be employed most effectively. And that means we must let Britain, Russia, China, and all other nations, including those of this hemisphere, use the weapons from that arsenal so that they can put them to most effective use. Too much is at stake for us to neglect peoples who are or may be attacked by our common enemies."

President Roosevelt told Congress that the total of Lease-Lend aid advanced to Nov. 30 was \$1,202,000,000. He said that the defenses of 32 countries and the British Empire had been

declared vital to the defense of the United States. Lease-Lend countries covered two-thirds of the earth's surface and contained nearly two-thirds of its population, according to charts submitted with the President's report. He pointed out that the production of arms was not enough; the arms must be delivered to the fighting men at the front. No supply problem of this magnitude had ever been encountered before, he asserted, and it entailed the greatest ship construction program in history.

The effect of our participation in the war on the Lease-Lend program was expressed in a statement issued by Secretary of War Stimson that "while immediately after the attack on Pearl Harbor by the Japanese it was necessary momentarily to stop shipment abroad to check available supplies, shortly thereafter procedure was established for releasing very substantial quantities of Lease-Lend material not necessary for the immediate needs of the United States. . . . The declarations of war against the United States . . . already have resulted and will continue to result in great stimulation of our munitions industry. This must inevitably increase rather than diminish shipments to those who are fighting our common enemy."

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PERSONNEL

The year 1941 brought important changes in the membership of the Supreme Court. Mr. Justice McReynolds and Chief Justice Hughes retired. Mr. Justice Stone was elevated to the Chief Justiceship; as associate justices the President appointed Senator James F. Byrnes of South Carolina and United States Attorney General Robert H. Jackson of New York. Seven of the nine justices have been placed on the Court by President Roosevelt. Two retired associate justices died during the year, Mr. Jus-

tice VanDevanter who left the bench in 1937, and Mr. Justice Brandeis who retired in 1939.

DECISIONS—TRENDS AND GROUPING

That the new Court is still engaged in what Professor E. S. Corwin of Princeton has aptly termed "Constitutional Revolution, Ltd.," (see his recent book by this title) is shown by the reversal during the year of six earlier decisions on important constitutional points and two on points of statutory construction. Any idea,

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however, that the new Court is goose-stepping along in a happy unison supposed to result from some common social and economic philosophy is belied by the facts. In the 60 odd cases reviewed in preparing this article, there were dissents in 22, and of these dissents 16 were by either three or four justices. These divisions in the Court constantly change, and there is no present indication of any consistent grouping of the justices, after the familiar pattern of the pre-1937 period.

The important decisions of the year fall into five groups. First, expansion and supremacy of Federal power gained new momentum in cases dealing with the commerce power, Federal control of primaries, and the exclusion of the states from the control of aliens. Second, civil liberty was protected in cases involving contempt of court through newspaper comment and in cases of negro discrimination. Other cases placed concrete limitations upon previously announced doctrines of civil liberty. Third, state taxes impinging on the Federal Government or its agents were upheld in two cases and disallowed in two without announcing any new principles. Fourth, a generous range of state taxation affecting interstate commerce was held valid, but state police power in this area received a setback in the important case holding the "anti-Okie laws" bad as burdens on interstate commerce. Finally, an unusually large group of cases dealt with problems of judicial power and jurisdiction, matters of more interest to lawyers than to laymen.

FAIR LABOR STANDARDS ACT HELD VALID

In the Fair Labor Standards Act of 1938 Congress undertook to abolish sub-standard labor conditions in the industries producing goods for the interstate market. It forbade the employment of workmen in the production of goods "for interstate commerce" at less than prescribed minimum wages and for more than prescribed maximum hours. It further

forbade the shipment in interstate commerce of goods in the making of which these wage and hour standards had been violated, and goods made in establishments in which "oppressive child labor" had been employed. All employers subject to the act were required to keep records of wages, hours of labor, and other conditions and practices of employment, to aid in the effective enforcement of the act, which was placed in the hands of an Administrator of the Wage and Hour Division in the Department of Labor. The statute was held valid by a unanimous Court in *United States v. Darby* (Feb. 3). Darby shipped lumber produced by labor paid lower wages and employed longer hours than the act allowed, and he failed to keep the required records. He attacked the constitutionality of the act on three grounds: first, it is not supported by the commerce clause which does not warrant Federal regulation of the conditions of manufacturing goods; second, it invades the reserved powers of the states in violation of the Tenth Amendment; third, it violates the due process clause of the Fifth Amendment. The district court found the act invalid on the first and last of these grounds.

Mr. Justice Stone, speaking for the Court, covered four points. First, Congress may validly bar from interstate commerce goods produced under substandard labor conditions. To do so is well within the commerce power which, in the words of Marshall in *Gibbons v. Ogden* (9 Wheat. 1, 196) "is complete in itself, may be exercised to its utmost extent, and acknowledges no limitation other than are prescribed in the Constitution." The act does not invalidly invade state power merely because its purpose and effect "is to restrict the use of articles of commerce within the state of destination." The motive and purpose of the regulation is to give effect to the public policy of Congress "that interstate commerce should not be made the instrument of competition in the distribution of goods produced under substandard labor conditions, which competition

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is injurious to the commerce and to the states from and to which the commerce flows." The motive and purpose which lead Congress to regulate interstate commerce "are matters for the legislative judgment upon the exercise of which the Constitution places no restriction and over which the courts are given no control." This plenary power of Congress "to exclude any article from interstate commerce subject only to the specific prohibitions of the Constitution" can not be reconciled with the Court's much criticised decision in *Hammer v. Dagenhart* in 1918 (247 U.S. 251) invalidating the Federal Child Labor Act of 1916. Accordingly that case "should be and now is over-ruled." In it a bare majority of the Court, "over the powerful and now classic dissent of Mr. Justice Holmes," limited the power of Congress to exclude articles from interstate commerce "to articles which in themselves have some harmful or deleterious property—a distinction which was novel when made and unsupported by any provision of the Constitution," and which "has long since been abandoned." The power of Congress over interstate commerce is the same in extent and kind as the power of the states over intrastate commerce.

The Court held, secondly, that Congress may validly impose on employers wage and hour restrictions with respect to all workmen engaged in producing goods for interstate commerce. These employees are admittedly not "engaged in interstate commerce." But the Court has long held that Congress may validly deal with intrastate activities when they are so related to interstate commerce and so affect it as to be within the reach of the power of Congress to regulate it. That is the situation here. Congress is here attempting to prevent the "spread of substandard labor conditions through the use of the facilities of interstate commerce for competition by the goods so produced with those produced under the prescribed or better labor conditions." A reasonable way of doing this is to forbid entirely the manufacture of

goods for interstate commerce under conditions which are substandard. "The means adopted . . . for the protection of interstate commerce by the suppression of the production of the condemned goods for interstate commerce is so related to the commerce and so affects it as to be within the reach of the commerce power." The Fair Labor Standards Act is in no way forbidden by the Tenth Amendment. *Hammer v. Dagenhart* rested in part on the theory that, for Congress to strike at child labor through the commerce power, was to violate the Tenth Amendment by using a delegated Federal power to achieve an undelegated and therefore unconstitutional end. Federal power, it was said, may not be so used as to invade the reserved powers of the states. This same doctrine was relied on in *United States v. Butler* (297 U.S. 1, 1936) to invalidate the Agricultural Adjustment Act. This theory is here bluntly discarded. Mr. Justice Stone observes: "The amendment states but a truism that all is retained which has not been surrendered. There is nothing in the history of its adoption to suggest that it was more than declaratory of the relationship between the national and state governments as it had been established by the Constitution before the Amendment . . ."

The last two points in the opinion are very brief. To require the employer to keep adequate records to show whether he has complied with the law "is an appropriate means to the legitimate end." Nor does the statute violate the Fifth Amendment. Legislative regulation of wages and hours of labor have been held not to deny due process of law. There is no want of due process in applying the statute to men and women alike. Nor does the act fail to meet the test of definiteness necessary to due process in a criminal statute. It would be difficult to overestimate the importance of this decision. By its authority, and that of the cases upholding the Wagner Act, Congress enjoys and exercises under the commerce clause full power to protect and

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promote the interests of the overwhelming bulk of American Labor.

FEDERAL CONTROL OF NAVIGABLE WATERS

The paramount power of the National Government over the navigable waters of the United States was emphasized in two cases. In *Oklahoma ex rel Phillips v. Guy Atkinson Company* (June 2), the governor of Oklahoma sought to enjoin the construction by the United States of the Denison Reservoir on the Red River in Texas and Oklahoma as authorized by an act of Congress of 1938. The petition alleged the unconstitutionality of the statute and heavy resulting damage to the state. It asserts that the dam will inundate some 100,000 acres of Oklahoma land, thereby seriously reducing tax income, that it will produce power which will be sold chiefly in Texas, that the dam has been built higher than necessary for flood control in order to generate power, and that any benefits to the navigability of the Red or Mississippi rivers are intangible, indirect, and unsubstantial. The project is, therefore, not a legitimate exercise of the commerce power to improve navigation, and accordingly violates the Tenth Amendment. A lower Federal three-judge court denied the injunction. This judgment the Supreme Court unanimously affirmed in an opinion by Mr. Justice Douglas. Congress may control non-navigable stretches of a river in order to promote navigation on navigable parts. The enterprise is part of a national system of flood control designed to protect commerce on the Mississippi and its major tributaries. Congress may control the watersheds of navigable streams in order to protect commerce on those streams from floods. This control also extends to intrastate non-navigable tributaries of navigable streams when necessary to protect the navigable rivers. It is for Congress, not the Court, to decide how necessary such regulation is and the details of its execution. Since Congress has effected flood control and the improved navigability

of rivers by this project it is immaterial that it may have had other objects also in mind, such as the generation of power. Dams may be built for several purposes as long as one of the purposes is constitutionally permissible. The valid purpose does not have to be the primary purpose. Since the construction of the dam and the reservoir were valid exercises of the commerce power, there has been no violation of the Tenth Amendment.

United States v. Chicago, M., St. P., & P. R. Co. (Mar. 31) held that the power of the Federal Government to improve the navigability of a river extends to the entire bed of the stream, which includes all the land below high water mark. The railroad, as a riparian owner, had constructed embankments along the Mississippi, portions of which were located between high and low water marks, but did not obstruct navigation. By constructing a dam to improve navigation, the government flooded this area. It is not required to pay compensation for this damage. This is not a taking of private property, since the rights of the owner are "subordinate to the dominant power of the Federal Government in respect of navigation."

NATIONAL LABOR RELATIONS BOARD CASES

The cases arising under the Wagner Act presented no major constitutional issues, but clarified the scope of the statute and the National Labor Relations Board's authority under it. The most important of these was *Phelps Dodge Corporation v. N.L.R.B.* (April 28). This held that it is an unfair labor practice within the meaning of the statute to refuse to hire workmen because of their labor union affiliations, even though they had never been employed before. Previous cases had not gone beyond holding the discharge of workmen for union membership barred by the act. In supporting this new and striking rule Mr. Justice Frankfurter observes: "The course of decisions in this Court since *Adair v. United*

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States, 208 U.S. 161, and *Coppage v. Kansas*, 236 U.S. 1, have completely sapped those cases of their authority." These two cases, in 1906 and 1915 respectively, had held unconstitutional Federal and state "anti-coercion acts," acts penalizing employer discrimination against union men in hiring and firing. Thus two much criticized cases pass out of the picture. The Court also held that the workmen who had been discriminated against could be ordered reinstated by the Board even though they had in the meantime secured "substantially equivalent" employment. This reinstatement may carry with it back pay less deductions for wages "wilfully unearned" through refusal to accept available employment. Justices Murphy, Black, and Douglas agreed with the result of the case but not with the Court's modification of the Board's order so as to deduct from back pay due reinstated employees the amount of "wilfully incurred" loss of wages. Mr. Justice Stone, with whom Chief Justice Hughes concurred, agreed that it is an unfair labor practice to refuse to hire workmen because of their union membership. "But it is quite another matter to say that Congress has also authorized the Board to order the employer to hire applicants for work who have never been in his employ and to compel him to give them 'back pay'."

A free speech issue was injected into the case of *N.L.R.B. v. Virginia Electric Power Company* (Dec. 22). Here the Board found that bulletins posted by the employer, together with speeches by company officers at meetings of workmen urging the advantages of an "inside" union, amounted to coercion of employees within the prohibitions of the statute. The company urged that the finding violated the First Amendment. The Court did not meet this challenge squarely. It held that the bulletins and speeches might form part of a general pattern of conduct on the part of the employer amounting to coercion. "In determining whether the Company actually interfered with, restrained,

and coerced its employees the Board has a right to look at what the Company has said as well as what it has done." The bulletins and speeches by themselves, however, did not justify a finding of coercion. Since it was not clear that the Board based its conclusions of coercion on the whole course of the company's conduct, rather than on the bulletins and speeches alone, the Court remanded the case for reconsideration by the Board in the light of this opinion.

In *H. J. Heintz v. N.L.R.B.* (Jan. 16) it was held that the company's refusal to sign a written contract embodying the terms of an agreement with a labor organization was a "refusal to bargain collectively" within the meaning of the statute, and that the Board could order the company to sign. In *N.L.R.B. v. Express Publishing Company* (Mar. 3) the Board found the company guilty of an unfair labor practice in refusing to bargain collectively. It issued an order restraining continuance of this refusal and also restraining any other violation of the act whatsoever. Over the dissent of three justices the Court held this order too broad. The order could properly restrain actual unlawful conduct, plus conduct reasonably related to it, but it could not validly include more.

LABOR AND THE ANTI-TRUST LAWS

An important case bearing on the status of labor union activities under the Federal anti-trust laws is *United States v. Hutcheson* (Feb. 3). The defendants were officers of a union. They called a strike because of an employer's refusal to employ their members rather than those of a rival union—a so-called "jurisdictional strike." Incident to the strike they picketed the employer's plant and urged that union members and their friends refrain from buying his product. The employer, Anheuser-Busch, Inc., is engaged in interstate commerce. The defendants were indicted for a criminal combination and con-

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spiracy in violation of the Sherman Act. The Court held the statute inapplicable. Mr. Justice Frankfurter pointed out that early Supreme Court decisions holding the Sherman Act applicable to labor union activities which resulted in restraints of interstate trade had led Congress to pass, first, the labor sections of the Clayton Act, and, second, the Norris-LaGuardia Act. The Clayton Act forbade the issuance of Federal injunctions against various enumerated labor union practices, and further declared that such practices are not violations of Federal law. The Norris-LaGuardia Act narrowed still further the power of Federal courts to issue injunctions in labor disputes, and is here declared to be a legislative disapproval of *Duplex Printing Press Company v. Deering* (254 U. S. 443) in which the Court in 1921 held that the labor immunities of the Clayton Act extended only to immediate employer-employee relations, and not to sympathetic or jurisdictional strikes. While the Clayton and Norris-LaGuardia Acts related only to labor injunctions, and not to criminal liability of labor unions, they express a Congressional intention to place normal labor union activities beyond the reach of the anti-trust statutes. The conduct of the defendants is fully protected against Federal injunction by the two statutes. It would be very strange if "that which on the equity side of the court is allowable conduct may in a criminal proceeding become the road to prison." Mr. Justice Roberts and Chief Justice Hughes dissented on the ground that the defendants had carried on a secondary boycott affecting interstate commerce and that under a long line of decisions this is a violation of the Sherman Act.

FEDERAL POWER OVER PRIMARY ELECTIONS

The power of Congress to regulate Congressional primary elections is at last fully established in *United States v. Classic* (May 26). This desirable result was accomplished by a most

round-about method. Classic, a commissioner of elections in New Orleans, was indicted in a Federal district court for wilfully altering and falsely counting ballots cast in a Congressional primary election in that city in 1940. These acts were alleged to violate sections 19 and 20 of the Criminal Code. Section 19 makes it a crime for "two or more persons [to] conspire to injure, oppress, threaten, or intimidate any citizen in the free exercise or enjoyment of any right or privilege secured to him by the Constitution or laws of the United States . . .," while section 20 penalizes anyone who "under color of any law, statute, ordinance, regulation or custom, wilfully subjects . . . any inhabitant of any State, Territory, or district to the deprivation of any rights, privileges, or immunities secured or protected by the Constitution and laws of the United States. . . ." The application of these penal laws to the conduct of Classic assumes that the right of a qualified voter in a Louisiana Congressional primary election to have his vote counted as cast is a right secured by the Constitution and laws of the United States.

The Court finds this assumption sound for the following reasons. The Constitution guarantees to qualified voters the right to choose Congressmen by Article I, section 2, which commands that members of the House of Representatives be "chosen every second year by the people of the several states," and by Article I, section 4, which, after giving the states the general management of Congressional elections, gives to Congress the power "to make or alter such regulations" by law. The concrete nature of the right secured to qualified voters to choose Congressmen is determined, therefore, by the laws of the state, plus any regulations imposed by Congress. A vital part of the Congressional election machinery in Louisiana is the primary election. It is so vital a part that the success of a candidate in the primary guarantees success in the final election. "The primary in Louisiana is an in-

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tegral part of the procedure for the popular choice of congressmen." Therefore the constitutional right to "choose" a Congressman includes the right to cast a ballot in a Congressional primary election and have it counted. "The words of sections 2 and 4 of Article I . . . require us to hold that a primary election which involves a necessary step in the choice of candidates for election as representatives in Congress, and which in the circumstances of this case controls that choice, is an election within the meaning of the constitutional provision and is subject to congressional regulation as to the manner of holding it."

Classic interfered with the constitutional right of the citizen to have his vote properly counted in a Congressional primary and he has accordingly violated the sections of the Criminal Code forbidding such invasion of rights. The Court's decision overrules what has been loosely regarded as the doctrine of *Newberry v. United States* (256 U. S. 232), decided in 1921. Newberry was convicted of violating the Federal corrupt practices act by spending in a Senatorial primary more money than the statute permitted. The Supreme Court set aside his conviction. Four justices held that Congress could not constitutionally regulate Federal primaries, four justices held that Congress could validly do so, while the ninth justice concurred in reversing the conviction on a ground irrelevant to the constitutional issue. The question of the power of Congress over primaries, therefore, "has not been prejudged by any decision of this Court."

A vigorous dissent by Mr. Justice Douglas, with whom Justices Black and Murphy joined, agreed that Congress may validly regulate Congressional primaries, but denied that it has done so by the sections of the Criminal Code here invoked. "Civil liberties are too dear to permit conviction for crimes which are only implied and which can be spelled out only by adding inference to inference." Doubt was expressed that Congress "by leaving section 19 (of the

Criminal Code) unmolested for some seventy years has legislated unwittingly on primaries."

FEDERAL ALIEN REGISTRATION LAW SUPERSEDES STATE LAW

In *Hines v. Davidowitz* (Jan. 20) the Court held that the Federal Alien Registration Act of 1940 superseded the Pennsylvania Alien Registration Act of 1939. The state statute required the registration of aliens over 18, the payment by them of a small annual fee, the acquiring and carrying of an identification card, and the showing of this on demand of police and certain other officers. A Federal district court held the act void as a denial of the equal protection of the laws, and as an encroachment upon the exclusive power of the Federal Government over aliens. Before the Supreme Court could review this decision, Congress passed the Alien Registration Act of 1940, covering somewhat the same ground. The Federal act requires the fingerprinting of aliens, but does not require the carrying of cards of identity. The Court did not decide whether the Pennsylvania act would have been valid if Congress had not acted, but held that the exercise by Congress of its power over aliens ousted the states from the field. Speaking for the Court Mr. Justice Black emphasized the supremacy of national law in the general field of foreign affairs, of which the treatment and protection of the nationals of other countries form an important and delicate part. When Congress has acted in respect thereto, "the states cannot, inconsistently with the purpose of Congress, conflict or interfere with, curtail or complement, the Federal law, or enforce additional or auxiliary regulations." The Federal act reveals a Congressional intention to set up "a single integrated and all-embracing system" of alien registration, and therefore the Pennsylvania act can not be enforced. Mr. Justice Stone dissented in an opinion in which Chief Justice Hughes and Mr. Justice McReynolds concurred. In his view Congress could

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set up an exclusive system of alien registration, but has not done so. The Pennsylvania act does not conflict with or obstruct the Federal act and should be upheld as a valid exercise of state police power.

FREEDOM OF SPEECH AND PRESS

The most important decision of the year involving free speech was handed down in the joint case of *Harry Bridges v. California* and *Times-Mirror v. Supreme Court of California* (Dec. 8). In a five-to-four decision, the Court held that judgments in the state court holding Bridges and the newspaper in contempt of court for publishing statements concerning pending litigation, abridged their freedom of speech and press in violation of the due process clause of the Fourteenth Amendment. The facts were as follows. While a motion for a new trial was pending in a case involving a dispute between an A. F. of L. union and a C. I. O. union of which Bridges was an officer, he sent to the Secretary of Labor a telegram, which he released also to the press, declaring the judge's decision "outrageous," and further stating: "Attempted enforcement of Schmidt decision will tie up part of Los Angeles and involve entire Pacific Coast. . . . [C. I. O. union] does not intend to allow state courts to override the majority vote of members in choosing its officers and representatives and to override the National Labor Relations Board."

The action against the newspaper was based on the publication of three editorials in the *Los Angeles Times*. Two members of a labor union had been found guilty of assaulting non-union truck drivers, and the date for sentence had been set by the court. The most questionable editorial closed with these sentences: "Judge A. A. Scott will make a serious mistake if he grants probation to Matthew Shannon and Kennan Holmes. This community needs the example of their assignment to the jute-mill." The Supreme Court's opinion reversing the judgments for contempt was

written by Mr. Justice Black. The argument ran as follows. No California statute forbids this type of publication. To hold the publications unlawful it must, therefore, appear that "they are of such a nature as to create a clear and present danger that they will bring about the substantive evils."

While general in terms, the "clear and present danger" test is appropriate to the present case, and the decisions of the Court make it clear that in applying it "the substantive evil must be extremely serious and the degree of imminence [of danger] extremely high before utterances can be punished." The fact that the summary power to punish for contempt out-of-court publications tending to obstruct justice has long been embedded in the common law does not place it beyond the reach of the First Amendment. It may not be so used as to abridge freedom of speech and press. The fair and orderly administration of justice must be fully protected, but it is not threatened by either of the publications here involved. The *Los Angeles Times* editorial was in line with the long-standing policy of the paper in regard to labor issues; it was what anyone in the community would expect the paper to say; and "to regard it, therefore, as in itself of substantial influence upon the course of justice would be to impute to judges a lack of firmness, wisdom, or honor, which we cannot accept as a major premise." The Bridges telegram may also be "dismissed as negligible" in so far as any coercive influence on the court is concerned. It threatened no illegal action on the part of Bridges, and in predicting a strike it told the judge nothing he did not already know.

Mr. Justice Frankfurter filed a long dissenting opinion in which Chief Justice Stone and Justices Roberts and Byrnes concurred. He emphasized the great importance of protecting the administration of justice from outside pressure and coercion, declared that the Court's decision removes that protection, and attacked

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the Court's refusal to allow the California courts, 3,000 miles away, to judge the necessity of punishing the publications here involved. He took sharp issue with the majority as to the threatening and coercive tendency of the publications.

The doctrine that fair and reasonable police regulations designed to keep order and promote safety on the streets do not violate freedom of speech or assembly was applied in *Cox v. New Hampshire* (Mar. 31). A state statute requires a special license with graduated fees for any parade or procession on the public streets. The appellants, Jehovah's Witnesses, without a license marched through a city street in groups of 20 in single file, carrying placards to advertise a meeting. They appealed their conviction under the statute alleging that it violated the rights of free speech, press, religion, and assembly guaranteed by the Fourteenth Amendment, that it gave the licensing authorities unlimited, arbitrary, and discriminatory power, and that it was fatally vague and indefinite. A unanimous Court rejected all these contentions. On its face the statute is a reasonable police regulation to effect the safe and orderly use of the public highways. "Civil liberties, as guaranteed by the Constitution, imply the existence of an organized society maintaining public order without which liberty itself would be lost in the excesses of unrestrained abuses. . . . One would not be justified in ignoring the familiar red traffic light because he thought it his religious duty to disobey the municipal command or sought by that means to direct public attention to an announcement of his opinions." As construed by the Supreme Court of New Hampshire the statute does not give the licensing board "arbitrary power or an unfettered discretion." The board must act upon each application for a license by uniform procedure, a full examination of the facts, and without discrimination. The fee required is a reasonable charge to cover extra police service to maintain public order. There was no evi-

dence that the licensing board had abused its authority.

In two cases in 1940 the Court held that state legislative bans on peaceful picketing abridged freedom of speech and press (*Thornhill v. Alabama*, 310 U. S. 88; *Carlson v. California*, 310 U. S. 106). The applicability of this doctrine to the confused circumstances of a milk wagon drivers' strike in Chicago sharply divided the Court in *Milk Wagon Drivers' Union v. Meadowmoor Dairies* (Feb. 10). The union picketed stores which sold milk distributed by dairies under the "vendor system." By this system the dairies sell milk to vendors who operate their own trucks and resell to retailers. These vendors do not maintain union standards of employment. Meadowmoor Dairies uses the "vendor system" and sought an injunction in the state court to restrain the union from interfering with the distribution of its products. A temporary injunction was issued, and the case was referred to a master. The master found that there had been violence on a considerable scale and recommended that all picketing, and not merely violent acts, should be enjoined. The trial court enjoined only acts of violence, and permitted peaceful picketing. The Supreme Court of Illinois reversed this ruling and permanently enjoined both violence and all picketing.

In an opinion by Mr. Justice Frankfurter, a majority of the Supreme Court affirmed this decision. The acts of picketing were, according to the master, "enmeshed with contemporaneously violent conduct which is concededly outlawed." The violence was not "episodic nor isolated." "And acts which in isolation are peaceful may be part of a coercive thrust when entangled with acts of violence. In such a setting it could justifiably be concluded that the momentum of fear generated by past violence would survive even though future picketing might be wholly peaceful." Since the findings of fact were made in 1937 the state court may appropriately be asked to

modify its injunction should it appear that "the passage of time has deprived the picketing of its coercive influence." The Court denies that it is qualifying the Thornhill and Carlson decisions. In those cases statutes, bad on their face, had to be dealt with and were struck down. Here the picketing is enjoined only because of intimate association with violence which gives it a coercive effect.

Mr. Justice Black dissented in an opinion in which Mr. Justice Douglas concurred, and Mr. Justice Reed dissented separately. The disagreement turned largely on conflicting estimates of the facts. Mr. Justice Black found in the record no evidence that the picketing was accompanied by violence or that the union officials had indulged in or encouraged violence. The violence which did occur was wholly disconnected with the picketing. The injunction, therefore, went much too far. It should restrain the violence but permit the peaceful picketing. As Mr. Justice Reed put it: "If the fear engendered by past misconduct coerces storekeepers during picketing, the remedy lies in the maintenance of order, not in denial of free speech. . . . If picketing is prohibited here, the right maintained by *Thornhill v. Alabama* collapses on the first attack." In *American Federation of Labor v. Swing* (Feb. 10), however, the Court upheld the right of peaceful picketing as protected by the Fourteenth Amendment. Here the picketing was carried on by a union seeking to unionize Swing's shop. The Illinois courts enjoined the picketing on the ground that the placards used were libelous, that there were acts of violence, and that there was no dispute between Swing and his immediate employees. The case turned on the last point and the Court held that "a state cannot exclude workingmen from peacefully exercising the right of free communication by drawing the circle of economic competition between employers and workers so small as to contain only an employer and those directly employed by him." Mr. Justice Roberts dissented.

NEGRO DISCRIMINATION

The determination of the Court to see that Negroes are accorded accommodations equal to those of whites under Southern segregation laws is evidenced by the decision in *Mitchell v. United States* (Apr. 28). Mitchell, Negro Congressman from Chicago, travelled from Chicago to Hot Springs, Ark. on a ticket which entitled him to Pullman accommodations. Upon entering Arkansas he was compelled to leave the Pullman car and travel in a day coach reserved for colored passengers. He would have been paid the difference between the Pullman and coach fare on demand. The coach was alleged by him to be inferior to those reserved for white passengers and was "filthy and foul smelling." The railroad undertook to provide Negroes with the equal but separate accommodations required by the Arkansas statute by allowing Negroes who desired Pullman accommodations to buy drawing room space, but on the occasion of Mitchell's journey the drawing rooms were all occupied. Negroes were not allowed to use the Pullman dining car or observation car. Three months later the railroad replaced the inferior coaches with modern coaches equal to those reserved for white persons.

It was admitted that the demand for Pullman accommodations by Negroes was very small. Mitchell filed a complaint with the Interstate Commerce Commission charging unlawful discrimination in violation of the Interstate Commerce Act. The Commission dismissed the complaint. The Supreme Court, speaking through Chief Justice Hughes, unanimously held Mitchell entitled to relief. He was entitled to complain even though he did not intend to take the same journey again, and it was appropriate to seek relief from the Commission. The act forbids inequality of treatment on grounds of race. The act is violated by a single instance of unequal treatment. The inequality is not ironed out by giving Negroes with first class tickets accommodations equal to those enjoyed by white

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persons traveling second-class, nor by allowing such Negro passengers to buy drawing room space (if any is available) at higher cost. The discrimination can not be justified by the negligible number of Negroes who desire Pullman accommodations. "The comparative volume of traffic cannot justify the denial of a fundamental right of equality of treatment. . . . It is the individual . . . who is entitled to the equal protection of the laws—not merely a group of individuals, or a body of persons according to their numbers." The Commission may not sanction discriminatory treatment on the ground of the practical difficulties of accord- ing equal treatment.

STATE POLICE POWER— REGULATION OF BUSINESS

The few cases which involved the validity under the due process clause of the Fourteenth Amendment of state police regulations of business do not merit extended comment. *Railroad Commission of Texas v. Rowan & Nichols Oil Company* (Jan. 6), following earlier decisions in analogous cases, held valid a highly complicated order of the Texas Commission "formulating a method for distributing among well owners the total amount of oil which it then allowed to be produced in the East Texas field." Three justices dissented. In *Olsen v. Nebraska* (April 28) a unanimous Court, speaking through Mr. Justice Douglas, upheld a Nebraska statute fixing the maximum charges which may be collected by a private employment agency from an applicant for a job. This case squarely overrules *Ribnik v. McBride* (277 U. S. 350) decided in 1928, but upon principles firmly established some years ago. *Skiriotes v. Florida* (April 28) upheld the right of Florida to forbid the use of diving apparatus for the purpose of taking commercial sponges from the Gulf of Mexico, the Straits of Florida, or other waters within the territorial limits of the state. The Court found no conflict between this statute and international law, any treaty, or any Fed-

eral statute. There is no denial of equal protection of the laws. The state has properly exercised its police power and may validly forbid its own citizens to take sponges with the aid of diving apparatus even at points outside the territorial limits of the state.

A five-to-four division arose in the Court in *Reitz v. Mealey* (Nov. 10) over the validity of a New York statute, later amended, which provided for the suspension for three years of the operator's license and registration certificate of any person for the non-payment within 15 days of a judgment for an injury resulting from the operation of an automobile. The suspension persists after three years unless the licensee can show proof of financial responsibility. The suspension may be lifted earlier than three years if the judgment is satisfied or if the judgment creditor gives consent upon proof of financial responsibility. The judgment may not be discharged by voluntary bankruptcy. The majority of the Court held the statute valid as a reasonable exercise of the state's police power "to enforce a public policy that irresponsible drivers shall not, with impunity, be allowed to injure their fellows." They declined to rule on the validity of the provisions which prevent a discharge in bankruptcy from lifting the penalties imposed for failure to satisfy the judgment, and which give the judgment creditor a control over the restoration of the license. These issues were not squarely before the Court and the provisions were held separable. Four justices, speaking through Mr. Justice Douglas, held that the act violates the Federal Bankruptcy Act by keeping alive for the benefit of the judgment creditor a remedy which survives bankruptcy.

DUE PROCESS IN CRIMINAL TRIALS

In *Smith v. O'Grady* (Jan. 17) it was held that Smith had been denied due process of law at his trial and that he could seek relief through habeas corpus. He alleged the fol-

lowing. He was arrested on a charge of burglary. He was uneducated and had no lawyer. He was persuaded to plead guilty to simple burglary, as he supposed, on the promise that if he did so plead he would be sentenced to not more than three years imprisonment. He was not shown a copy of the charge against him. He was then brought before a judge, summarily arraigned, and upon the pre-arranged plea of guilty sentenced to 20 years imprisonment. The charge actually filed against him had been "burglary with explosives." He asked again to see the charge, to be allowed to change his plea, and to be given counsel for his defense. These requests were all denied, and "within the hour" he was on his way to prison. The Nebraska courts denied Smith the right to assert illegal imprisonment by habeas corpus, and held that his only relief lay in applying to the Nebraska Parole and Pardon Board. The Court held unanimously that if his allegations were true his conviction was in violation of due process of law. It held also that he could not be denied a writ of habeas corpus as a means of bringing to judicial scrutiny alleged abridgment of rights guaranteed by the Constitution of the United States. A somewhat similar result was reached in *Ex parte Hull* (Mar. 3). Here a Michigan state prison regulation required all legal documents in habeas corpus proceedings to be passed upon by various state officials who, if not satisfied with them, might refer them back to the inmate. This invalidly abridges the prisoner's constitutional right to apply to a Federal court for a writ of habeas corpus. Whether the petition for the writ is properly drawn is a question for the court, not the prison authorities. In this case, however, the petitioner did not prevail on the merits.

The notorious California "rattlesnake murder" case brought two questions of criminal due process to the Supreme Court. This is the case of *Lisenba v. California* (Dec. 8). The defendant was convicted of first-degree murder for having killed his

wife in order to collect life insurance which he had previously taken out upon her life. The state's case was that, with the aid of an accomplice, he first tried to kill his wife by tying her blindfolded to a table and then releasing in the room rattlesnakes which were expected to bite and kill her. When this method was unsuccessful he drowned her in a fish pool by holding her head under water. The defendant claimed he had been denied due process of law on two grounds. First, he was twice questioned unlawfully by police officers for long periods of time, and subsequently made a confession which was used against him and led to his conviction. Second, at his trial the state produced two rattlesnakes, identified as the ones purchased by the defendant, and the exhibition of these in the court room inflamed the jury against him, caused alarm and panic among those present including the jury, and "so infused the trial with unfairness as to deny due process of law." The Court, with two justices dissenting, held that the use of the defendant's confession did not under the circumstances deny due process. While illegal "third degree" methods were used, it did not appear that they induced the confession. The introduction of the snakes as evidence, while "shocking to the sensibilities of those in the courtroom," did not render the trial so unfair as to deny due process.

IMPAIRMENT OF OBLIGATION OF CONTRACTS

A creditor is constitutionally entitled to no more than the full amount of the debt. The obligation of his contract is not impaired by a later state statute which so changes the procedure for the collection of the debt as to reduce his chance of getting more than his contract calls for. In *Gelfert v. National City Bank* (April 28) the bank brought suit to foreclose a mortgage made in 1932. In 1938 a judgment was entered for \$18,401.25, and at the foreclosure sale the bank bought the property for \$4,000. It then asked a deficiency

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judgment of \$16,162.12, covering the difference between the judgment and the sale price plus taxes, fees and expenses. Thus the mortgagor still owed the bank all but some \$2,000 of the original amount. Alleging that the sale price of \$4,000 was "wholly inequitable and unconscionable," he sought the relief provided by a New York statute of 1938 which directed the court, upon proper motion, in fixing the amount of a deficiency judgment to determine the "fair and reasonable market value of the mortgaged premises" and deduct that from the amount of the debt unless the foreclosure sale price should be higher. The Court unanimously held that this statute did not impair the obligation of the mortgage contract. The formula for fixing the amount of a deficiency judgment is not so embedded in the contract as to be beyond the exercise of legislative power, which may be validly exercised to see that the creditor does not get more than the full amount due him.

The Court divided sharply, however, in another contract clause case, *Wood v. Lovett* (May 26). An Arkansas statute of 1935 provided that a sale of land for the non-payment of taxes should not be set aside because of "irregularities or informalities" of procedure prior to the sale. The purpose was to protect those buying such lands from the state and to encourage such purchases. Land acquired by the state in 1933 for non-payment of taxes was sold to Wood in 1936. In 1937 the legislature repealed the Act of 1935, and in 1939 Wood's title was attacked on the ground of procedural irregularities prior to the tax sale. The title was good under the statute of 1935, but not under the statute of 1937. Six justices held in an opinion by Mr. Justice Roberts that the repealing statute of 1937 impaired the obligation of the sale contract under which Wood acquired his title. The dissenting justices, Black, Douglas and Murphy, held that the act of 1937 was a proper exercise of state police power to aid distressed land owners. Pur-

chasers of tax sale land can obtain full compensation if the sale is set aside for irregularity.

INTERGOVERNMENTAL TAX IMMUNITY

Four cases arose in the field of intergovernmental taxation. The most important of these was *Alabama v. King & Boozer* (Nov. 10) in which a unanimous Court held that a state may validly levy a sales tax on the purchase of materials by a contractor for use in building an army camp for the United States under a cost-plus contract. Congress has declined to pass legislation which would give immunity from state taxation to contractors under "cost-plus" contracts with the Federal Government. Nor does the Constitution create such tax immunity. To hold the contractor liable to the tax is to apply the same principle which, in *James v. Dravo Contracting Co.* (302 U. S. 134), held a government contractor liable to a state tax on his gross receipts under the contract. "So far as such a non-discriminatory state tax upon the contractor enters into the cost of the materials to the government, that is but the normal incident of the organization within the same territory of two independent taxing sovereignties. The asserted right of one to be free of taxation by the other does not spell immunity from paying the additional costs, attributable to the taxation of those who furnish supplies to the government and who have been granted no tax immunity. So far as a different view has prevailed, see *Panhandle Oil Co. v. Mississippi* (277 U. S. 218) . . . we think it no longer tenable." It will be recalled that the Panhandle Oil Company case, in 1928, had held void a state sales tax applied to the sale of oil to the Federal Government. It was in the course of a vigorous dissent in this case that Mr. Justice Holmes, referring to Marshall's famous epigram that "the power to tax involves the power to destroy," turned his almost equally famous epigram that "the power to tax is not the power to destroy while this

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Court sits." *Curry v. United States* (Nov. 10) differs from *Alabama v. King & Boozer* only in the fact that the state tax involved was a "use" tax "in respect of materials purchased in another state for use in performing a 'cost-plus' contract with the United States." The constitutional question involved was the same and the tax was upheld.

In *Federal Land Bank v. Bismark Lumber Co.* (Nov. 10) the Court unanimously held invalid the attempt to collect from the bank a North Dakota sales tax on purchases made from the lumber company for necessary improvements on farms which the bank had acquired by foreclosure proceedings. The bank is a government corporation created under the Federal Farm Loan Act of 1916, and the statute confers on these banks immunity from state taxation with certain exceptions not here relevant. The state contended that Congress could constitutionally confer tax immunity only upon the "governmental" functions performed by the bank, and that the functions it was here performing were not "governmental" but were "incidental to its business of lending money, an essentially private function." The immunity, therefore, does not apply. This is an effort to read into the law of Federal immunity from state taxation the rule of *South Carolina v. United States* (199 U. S. 437), many times reaffirmed, that states are immune from Federal taxation only with respect to their governmental, and not their private or proprietary, functions. The Court refused to do this. It declared: "The Federal government is one of delegated powers, and from that it necessarily follows that any constitutional exercise of its delegated powers is governmental. . . . It also follows that when Congress constitutionally creates a corporation through which the Federal government lawfully acts, the activities of such corporation are governmental." This rule was announced by Mr. Justice Stone in *Graves v. New York* (306 U. S. 466) in which state and Federal salaries were held liable to

intergovernmental taxation. While not dictum in that case, it had not lain at the root of the Court's decision as it did in the present case.

In *United States v. Alabama* (May 26) the long-established principle that lands owned by the United States can not be taxed by the states is invoked to prevent the enforcement of state tax liens against lands which had been sold by their owners to the Federal Government. The United States brought action to quiet title to the lands and was sustained.

STATE TAXATION OF INTERSTATE COMMERCE

The persistent and troublesome problem of the relations between state taxing power and interstate commerce emerged in several cases, and in general the decisions sustained the exercise of state authority. In earlier cases the Court held that foreign corporations engaged in interstate commerce but selling goods within a state through local agents and places of business may be compelled by the state to collect from local purchasers the state use tax. (See *Felt & Tarrant Mfg. Co. v. Gallagher* [306 U. S. 62, 1939]). In *Nelson v. Sears, Roebuck & Co.* (Feb. 17) a divided Court pushed this doctrine a good deal further. Sears, Roebuck & Company is a New York corporation which carries on an interstate mail-order business and also operates retail stores throughout the country. In order to conduct such stores in Iowa the company entered the state as a foreign corporation in 1928, securing the necessary permit and paying the required fees. It still maintains this status in Iowa. It also carries on a substantial mail-order business with Iowa purchasers, a business having no direct connection with that done by its retail stores.

Iowa imposes a tax on the use in Iowa of tangible personal property at the rate of two per cent of the purchase price. The Iowa law further provides that every retailer having a place of business in the state and selling goods for use in the state

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"shall at the time of making such sales, whether within or without the state, collect the tax imposed by this act from the purchaser." Sears, Roebuck & Company were thus required to collect the use tax, not only on the sales made in their retail stores in Iowa, but also on the company's mail-order sales in the state. The company contended that it could not be forced to collect the tax on this mail order business. Under the Iowa law, however, its refusal to do so would result in the revocation of its permit to operate its retail stores in the state. The Supreme Court, speaking through Mr. Justice Douglas, held the statute valid. The purchaser is in Iowa, and the tax is upon use of the goods in Iowa. The tax does not, therefore, fall on something beyond the state's jurisdiction. To require the company to act for the state in collecting the tax does not subject it to an unconstitutional burden. The company enjoys privileges in Iowa, and "Iowa can exact this burden as the price of enjoying the full benefits flowing from its Iowa business." There is no discrimination against interstate commerce, since sales made within the state pay the same tax as these mail-order sales. A vigorous dissenting opinion by Mr. Justice Roberts, concurred in by Chief Justice Hughes, urged that the statute imposes a direct burden on interstate commerce, and also violates the Fourteenth Amendment by taxing transactions outside the state. The same result was reached by the Court in *Nelson v. Montgomery Ward & Company* (Feb. 17) on essentially the same facts.

In three other cases state taxes alleged to burden interstate commerce were held valid. In *Caskey Baking Company v. Virginia* (Apr. 28) the Court held that the company, operating a bakery in West Virginia but registered as a foreign corporation in Virginia, could be required to pay a license tax for the privilege of peddling bread wholesale from trucks covering regular routes in Virginia. The tax fell on the peddling, not on interstate commerce. In *De-*

partment of Treasury v. Ingram-Richardson Mfg. Co. (May 5) Indiana was permitted to levy a gross income tax on the company's business of enameling metal in its Indiana factory. The fact that the metal parts which were enameled were trucked into the state by the company for that purpose and then trucked back again to out-of-state customers did not cause the tax to fall on interstate commerce. A similar result was reached in *Department of Treasury v. Wood Preserving Corporation* (Apr. 28). The transactions involved were more complicated but the Court found that the company purchased railroad ties in Indiana which it subsequently sold in Indiana to railroad companies, and therefore was liable to the Indiana gross income tax.

STATE POLICE POWER AND INTERSTATE COMMERCE— ANTI-OKIE LAW CASE

The most important case of the year, perhaps of many years, was *Edwards v. California* (Nov. 24), holding invalid as a barrier to interstate commerce the California so-called "anti-Okie law" penalizing the bringing into the state of indigent persons. The importance and sweep of the social problem involved and the far-reaching implications of the doctrine announced, lift this case out of the usual category of conflicts between state police power and interstate commerce. The facts in the case were simple. The California statute provides: "Every person, firm, or corporation . . . that brings or assists in bringing into the state any indigent person who is not a resident of the state, knowing him to be an indigent person, is guilty of a misdemeanor." Edwards, a citizen of the United States and a resident of California, drove into Texas for the purpose of bringing his brother-in-law, Frank Duncan, back to California with him. Edwards found upon arrival in Texas that Duncan had last been employed by the W.P.A. and knew, therefore, that he was an indigent person. The two men drove

to Edwards' home in California, Duncan arriving without funds and with no job. He was unemployed for ten days and then secured financial assistance from the Farm Security Administration. It was not disputed that Edwards had violated the statute. He alleged that the statute violated several provisions of the Federal Constitution. The case was argued twice in the Supreme Court and aroused great interest. More than 20 states have statutes similar to that of California. The American Civil Liberties Union presented a brief, as did the attorney for the Select Committee of the House of Representatives to Investigate Interstate Migration of Destitute Citizens.

The Court held unanimously that the California statute was unconstitutional, but the justices differed sharply as to the grounds upon which that result should rest. Five members of the Court, in an opinion by Mr. Justice Byrnes, held the act bad as an obstruction of interstate commerce. The opinion runs as follows. The transportation of passengers across state lines is interstate commerce. The states may, in matters of local concern, exercise their police powers in such a way as to affect interstate commerce, but there are clear limits to their authority to do so. "None is more certain than the prohibition against attempts on the part of any single state to isolate itself from difficulties common to all of them by restraining the transportation of persons and property across its borders." The express purpose of the statute is to prevent the transportation of indigent persons across the California border. "The burden upon interstate commerce is intended and immediate; it is the plain and sole function of the statute. . . . We think this statute must fail under any known test of the validity of state interference with interstate commerce." The problems presented by the migration of large numbers of persons across state lines are problems of national concern. If this interstate migration is to be regulated it must be by uniform national pol-

icy. The problem "does not admit of diverse treatment by the several states." The Court has always held those aspects of interstate commerce free from state control which, if regulated at all, require uniform regulation by a single authority. The case of *New York v. Miln* (11 Peters 103) in 1837 suggested that it might be necessary for a state "to provide precautionary measures against the moral pestilence of paupers, vagabonds, and possibly convicts. . ." The Court is not bound by this language. Even so, it is doubtful if Duncan is a "pauper," and "we do not think it will now be seriously contended that because a person is without employment and without funds he constitutes a 'moral pestilence.' Poverty and immorality are not synonymous."

A concurring opinion by Mr. Justice Douglas, with which Justices Black and Murphy agreed, vigorously objects to grounding the Court's decision on the commerce clause. It insists that "the right to move freely from state to state is an incident of national citizenship protected by the privileges and immunities clause of the Fourteenth Amendment against state interference." It was clearly held in *Crandall v. Nevada* (6 Wallace 35), before the Fourteenth Amendment was adopted, that this right of free migration was "a right fundamental to the national character of our Federal government" and that doctrine has been affirmed in later decisions. To allow the states to restrict the free movement of those who are poor and destitute would engraft an exception on the rights of national citizenship which would "contravene every conception of national unity. It would also introduce a caste system utterly incompatible with the spirit of our system of government."

Mr. Justice Jackson concurred separately. He admitted that the Court's decision could, under the authorities, rest on the commerce clause, but preferred to base it on the privileges and immunities clause of the Fourteenth Amendment. "The migrations

of a human being, of whom it is charged that he possesses nothing that can be sold and has no wherewithal to buy, do not fit easily into my notions as to what is commerce." The Supreme Court has held that an alien admitted to this country under Federal law enjoys the right "of entering and abiding in any state of the Union" (*Truax v. Raich*, 239 U. S. 33). "Why we should hesitate to hold that Federal citizenship implies rights to enter and abide in any state of the Union at least equal to those possessed by aliens passes my understanding. The world is even more upside down than I had supposed it to be, if California must accept aliens in deference to their Federal privileges but is free to turn back citizens of the United States unless we treat them as subjects of commerce."

A California statute regulates the business of agents who sell transportation over the public highways of the state. Such an agent must secure a license, pay a nominal license fee, and file a bond of \$1,000 as a guarantee of the faithful performance of the contracts for transportation negotiated. In *California v. Thompson* (April 28) this act was held validly applicable to agents selling tickets for interstate bus transportation. Congress has passed no laws relating to this subject. The statute is a reasonable exercise of state police power and does not obstruct or burden interstate commerce. "It is not shown to be other than what on its face it appears to be, a measure to safeguard the members of the public desiring to secure transportation by motor vehicle, who are peculiarly unable to protect themselves from fraud and overreaching of those engaged in a business notoriously subject to those abuses." In 1927 the Court held invalid an almost identical Pennsylvania statute applicable to agents dealing in ocean steamship transportation. This was the case of *Di Santo v. Pennsylvania* (273 U. S. 34). Justices Brandeis, Holmes, and Stone dissented. In the present case this decision is squarely overruled.

FEDERAL JUDICIAL POWER

The Supreme Court decided in the course of the year an unusually large number of cases, more than a dozen, dealing with problems of judicial power, jurisdiction, and other matters relating more or less narrowly to the Court's own methods of work. Only one of these was of enough general interest to justify comment here. *Nye v. United States* (Apr. 14) restricted the power of a Federal court to punish, as criminal contempt, misconduct committed out of the presence of the Court, and in so doing overruled an earlier much-criticized decision. The facts were these. One Elmore brought an action in the Federal district court in North Carolina against a concern making and selling a medicine, alleging that his son died as a result of using the medicine. He was illiterate, and feeble in mind and body. By the use of liquor and persuasion, Nye induced Elmore to seek to have the case dismissed. Nye was cited for contempt of the district court for having tried to prevent the trial of Elmore's action on its merits, thus obstructing the course of justice. He was adjudged guilty and fined.

The Supreme Court found that this was a case of criminal and not civil contempt. "A contempt is considered civil when the punishment is wholly remedial, serves only the purposes of the complainant, and is not intended as a deterrent to offenses against the public. The facts of this case do not meet that standard." The crucial issue was whether the misconduct of Nye could be summarily punished as a contempt, or whether Nye should have been indicted and tried by a jury. The relevant section of the Criminal Code, derived from a statute passed in 1831, provides: "That the power of the several courts of the United States to issue attachments and inflict summary punishments for contempts of court, shall not be construed to extend to any cases except the misbehavior of any person or persons in the presense of the said courts, or so near thereto as to obstruct the administration of justice. . . ." Another section of the code provides for

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the normal criminal prosecution of persons who corruptly or by threats or force seek to influence or intimidate jurors, witnesses or court officers, or seek to obstruct or impede the administration of justice by such means. Nye's conduct took place 100 miles from where the court was sitting. The Court held that it was not punishable as a contempt. The words "in the presense of the said courts," and "so near thereto as to obstruct," used in the quoted section of the code, have geographical, not causal connotation.

This view is supported by the legislative history of the statute which shows it to have been passed to curb early judicial abuse of the contempt power. In 1918 in *Toledo Newspaper Company v. United States* (247 U.S. 403), the Court upheld a Federal district court in summarily punishing for contempt a newspaper which made objectionable press comments about the judge and pending litigation. Justices Holmes and Brandeis dissented. This case is now squarely overruled,

and the contempt power under existing Federal law extends only to misconduct "in the vicinity of the court disrupting to quiet and order or actually interrupting the court in the conduct of its business." Nye could be punished under other sections of the Criminal Code where he would be given the normal safeguards of a criminal trial. Mr. Justice Stone, with whom Chief Justice Hughes and Mr. Justice Roberts concurred, dissented on the ground that "This Court has hitherto, without a dissenting voice, regarded the phrase 'so near thereto' as connoting and including those contempts which are the proximate cause of actual obstruction to the administration of justice, whether because of their physical nearness to the court or because of a chain of causation whose operation in producing the obstruction depends on other than geographical relationships to the Court." If this long-established rule is to be changed, it should be done by Congress and not by the Court.

FEDERAL ADMINISTRATIVE AGENCIES

By JOHN A. TILLEMA

PROFESSOR, THE GEORGE WASHINGTON UNIVERSITY

STATE DEPARTMENT

Some reorganization of the State Department has taken place to integrate more closely the Department's activity in the economic warfare program against the Axis.

A Board of Economic Operations was given general supervision over the activities of a number of divisions having functions in connection with the economic defense of the United States. It is the duty of the Board to coordinate these with the activities of other government agencies.

A new Caribbean Office was established in the State Department to strengthen social and economic co-operation between this country, its possessions and bases in the Caribbean with other nations and colonies in that area. The new Office functions

under the Divisions of Latin American Republics and European Affairs.

The Division of Controls was abolished. It had charge of the issuing of licenses for the export of arms and other materials under the restrictions set up under the Neutrality regulations. Some of its functions were transferred to the Economic Defense Board and other units.

Assistant Secretaries of State Dean Acheson and A. A. Berle, Jr.; Herbert Feis, adviser on international economic affairs; Leo Pasvolksy, special assistant to the Secretary, and the chiefs of the Commercial Policy and Agreements, Exports and Defense Aid, Defense Materials, Studies and Statistics, World Trade Intelligence, and Foreign Funds and Financial Divisions were made members of the new Board of Economic Operations. All

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but two of the divisions, whose chiefs were made members of the Board, World Trade Intelligence and Commercial Policy and Agreements, were newly created.

UNDER SECRETARY OF WAR

This new office was created by act of Congress Dec. 16, 1940 and will continue, unless terminated, till Jan. 20, 1945.

BUREAU OF FOREIGN AND DOMESTIC COMMERCE

The Bureau in the Department of Commerce was reorganized by order of the Secretary on Jan. 23, 1941. It now has five major divisions: research and statistics, industrial economy, regional economy, international economics, and commercial and economic information.

DIVISION OF POWER

On April 18, 1941, the Secretary of the Interior created a Division of Power to supervise all matters connected with electric power over which the Department of the Interior has jurisdiction, and to coordinate the activities and policies of all agencies dealing with electric power.

ELECTRIC HOME AND FARM AUTHORITY

By act of Congress, approved June 10, 1941, the activities of this agency were extended to Jan. 22, 1947.

MARITIME LABOR BOARD

The life of this Board was extended by act of Congress for one year, till June 29, 1942. The jurisdiction of this authority in matters of mediation and arbitration was repealed except that it may act as mediator in all cases in which mediation has been requested and actively undertaken prior to June 23, 1941.

DISASTER LOAN CORPORATION

The life of this Corporation was extended by act of Congress June 10, 1941 to Jan. 22, 1947. It has jurisdiction in case of floods and other catastrophes occurring during this period.

DEPARTMENT OF COMMERCE FIELD SERVICES

The field offices of the Bureau of Census and the Bureau of Foreign and Domestic Commerce of the Department of Commerce were consolidated. The new arrangement provides for a regional office in each of the 12 Federal Reserve Districts and 19 other offices in cities in various parts of the United States. Each of the regional offices will operate under a Manager. The new service was set up by order of the Secretary of Commerce May 26, 1941.

BITUMINOUS COAL DIVISION

Congress on April 11, 1941 approved the continuance of the Bituminous Coal Division of the Department of the Interior until April 26, 1943.

BOARD OF LEGAL EXAMINERS OF THE CIVIL SERVICE COMMISSION

This Board was appointed by the President on June 18, 1941. It consists of the Solicitor General of the United States, the Principal Legal Examiner of the Civil Service Commission, *ex officio*, and two persons appointed from the law teaching profession, two attorneys appointed from private practice and five selected from the chief law officers of the Federal agencies. Their functions are to determine the manner by which the Civil Service Commission shall establish registers for the appointment of attorneys and to promote the development of a merit system for the recruitment, selection, promotion, and transfer of attorneys in the classified civil service.

NATIONAL ARCHIVES TRUST FUND BOARD

This Board was established by act of Congress, approved July 9, 1941. Its functions are to receive gifts and to administer funds so derived. The members are: the Archivist of the United States, Chairman of the House Library Committee, and Chairman of the Senate Library Committee.

FEDERAL ADMINISTRATIVE AGENCIES

OFFICE OF BITUMINOUS COAL CONSUMERS' COUNSEL

By act of Congress of April 11, 1941, the Office of Bituminous Coal Consumers' Counsel was made an independent establishment and upon it were conferred all the functions which had been conferred on the Office of Consumers' Counsel of the National Bituminous Coal Commission by the act of April 26, 1937.

OFFICE OF AGRICULTURAL DEFENSE RELATIONS

This office was established in the Department of Agriculture by Executive Order on May 5, 1941 to supersede the Division of Agriculture of the National Defense Advisory Commission. Its functions are: to serve as a clearing house for agricultural needs as they relate to defense, to facilitate the coordination of defense operations carried on by the Department of Agriculture, to assist the Secretary in maintaining effective channels of communication between the Department of Agriculture and the several defense agencies with respect to procurement, production, priorities, price, and other activities involving agricultural considerations, and to assist in the planning of adjustments in the agricultural program in order to meet defense needs.

OFFICE OF COORDINATOR OF INFORMATION

This agency was established by order of the President, as Commander-in-Chief of the Army and Navy, July 11, 1941, to collect and analyze information on national security, and to make such information available to the President and to such other agencies as he may determine.

OFFICE OF GOVERNMENT REPORTS

Congress approved the appropriation of not to exceed \$1,500,000 on June 9, 1941 for the Office of Government Reports established in the Executive Office of the President. Heretofore, the funds for this office have been allocated from the emergency relief acts.

OFFICE OF PETROLEUM COORDI- NATOR FOR NATIONAL DEFENSE

By letter to the Secretary of the Interior May 28, 1941, the President designated the Secretary as Coordinator. His duties are to gather information concerning the needs for petroleum and petroleum products and to make recommendations to appropriate Federal agencies as to the action which is desirable or necessary to insure the maintenance of an adequate supply of petroleum and petroleum products.

OFFICE OF PRICE ADMINISTRA- TION AND CIVILIAN SUPPLY

This agency was created by the President on April 11, 1941. It is headed by an administrator appointed by the President. The duties of the office are to take necessary steps to prevent price inflations, to prevent speculative accumulation, to stimulate production for civilian use, to make provision for equitable adjustments among civilian demands, to make studies of civilian requirements, to determine maximum prices, and to make recommendations to the President.

There is created within the Office of Price Administration and Civilian Supply a Price Administration Committee, composed of the Price Administrator as chairman, Secretary of the Treasury, the Secretary of Agriculture, Federal Loan Administrator, chairman of the Tariff Commission, chairman of the Federal Trade Commission, Director General and Associate Director General of the Office of Production Management, or such alternate as may be designated by each of the named officers, and such persons as the President may wish to add. This Committee shall make findings and recommendations regarding maximum prices.

OFFICE OF CIVILIAN DEFENSE

This office was erected within the establishment known as the Office of Emergency Management by Executive Order of May 20, 1941. The duties of the Civilian Defense unit are to plan, coordinate, and promote ac-

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tivities relating to the protection of life and property in event of emergencies. The head of the Office, a director, serves without compensation. Within the unit are a Board of Civilian Protection and a Volunteer Participation Committee, to function as advisory bodies and to serve without compensation. The Board of Civilian Protection consists of the director of Civilian Defense as chairman, one representative from each of the War, Navy, and Justice Departments, and the Federal Security Agency. The Council of State Governments, American Municipal Association, United States Council of Mayors, and American Red Cross are invited to designate a representative for the Board.

The Volunteer Participation Committee consists of the director of Civilian Defense, as chairman, and representatives of regions and interests to be selected by the President. The number was at first set at 20, but this was increased to 45.

COMMITTEE ON FAIR EMPLOYMENT PRACTISE

On June 25, 1941 an Executive Order created in the Office of Production Management the Committee on Fair Employment Practise to investigate complaints of discrimination in employment by reason of race, creed, color, or national origin. The Committee has a chairman and five additional members. The regulations that the Committee is appointed to apply require that government agencies dealing with defense production shall take special measures to prevent discrimination and that all defense contracts shall contain a special provision obligating the contractor not to discriminate against any worker because of race, color, creed, or national origin.

OFFICE FOR EMERGENCY MANAGEMENT

The functions of the Office for Emergency Management were greatly increased by administrative order of Jan. 7, 1941, so that it now serves to advise and assist the President to discharge the responsibility imposed on

him by the war; to serve as a channel of communication between the agencies and the President; to coordinate the work and activities of the Council of National Defense, the Advisory Commission to the Council of National Defense, Defense Communication Board, and Office of Production Management.

OFFICE OF PRODUCTION MANAGEMENT

Perhaps the most important division under the Office for Emergency Management is the Office of Production Management created by the President Jan. 7, 1941. Its functions are to formulate and execute measures to increase production and insure the coordination of the services of the government; to advise with respect to plans; to make plans for an adequate supply of essential raw materials; to formulate plans for the mobilization of defense facilities; to stimulate the creation of additional facilities; to determine the manner in which priorities shall be accorded; to serve as the liaison and channel of communication between the advisory Council of National Defense and the Departments of War and Navy. The office has the following divisions: Production, Purchases, Priorities, Materials, Labor, Civilian Supply, and Contract Distribution. It is headed by a director general and an associate director general appointed by the President with the advice of the Secretaries of War and Navy.

DIVISION OF DEFENSE HOUSING COORDINATION

This agency, under the direction of a Coordinator appointed by the President, was established in the Office of Emergency Management by Executive Order 8630 of January 11, 1941.

OFFICE OF SCIENTIFIC RESEARCH AND DEVELOPMENT

This office was created by the President June 29, 1941, in the Office of Emergency Management. Its functions are to advise the President with regard to the status of scientific research relating to the national de-

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fense; to serve as a center for the mobilization of scientific personnel; to coordinate experimental and other scientific and medical research; to develop plans for the conduct of scientific research; to initiate and support scientific research on mechanisms and devices of warfare and on medical problems affecting the national defense; to promote such scientific and medical research as may be requested by any country whose defense the President deems vital to the defense of the United States. With the Office of Scientific Research and Development are the following units: (1) National Defense Research Committee. This Committee is to recommend to the director the need for and character of contracts to be made with Universities, research institutes, and industrial laboratories. (2) Committee on Medical Research. This Committee shall advise the Director in regard to the mobilization of medical and scientific personnel and shall recommend the kind of contracts to be made with universities, hospitals, and other agencies conducting medical activities. (3) Advisory Council, consisting of the director, chairman of the National Advisory Committee for Aeronautics, National Defense Research Committee, chairman of the Committee on Medical Research, and one representative from the Army and Navy. The purpose of this Council is to coordinate research activities of the various private and governmental groups.

DIVISION OF CONTRACT DISTRIBUTION

By Executive Order of Sept. 3, 1941, a Division of Contract Distribution was created within the Office of Production Management to provide for the more effective utilization of existing plant facilities for defense purposes; the conversion into defense production of civilian industries affected by priorities and raw material shortages; the alleviation of unemployment caused by the effects of such priorities and shortages; the local pooling of facilities and equipment; sub-contracting; and the wider dif-

fusion of defense contracts among the smaller business enterprises in every part of the nation.

The new Division is to have at its head a director appointed by the Office of Production Management with the approval of the President. The director is to discharge the following duties under the direction and supervision of the Director General, acting in association with the associate director general:

(a) Formulate and promote specific programs for the purchase of supplies for the Army and Navy in small units but among a greater number of firms and in as many different localities as possible.

(b) Formulate and promote modifications in Federal procurement practices and procedures relating to negotiating contracts, bidding practice, performance and bid bonds, and other practices and procedures to the end that there shall be a wider distribution of defense contracts and purchases.

(c) Develop programs for the conversion of plants and industries from civilian to defense production, with the assistance of the government if necessary.

(d) Stimulate the organization and use of local industrial defense production associations.

(e) Promote and stimulate sub-contracting wherever feasible.

(f) Advise manufacturers and business enterprises of the specific ways in which their facilities and tools may be utilized in defense production, and advise such manufacturers and business men with respect to the procedures and practices of the several Federal procurement agencies.

(g) Facilitate through the regular commercial banking channels, the Reconstruction Finance Corporation, and the Federal Reserve Banks and their branches the necessary financing facilities for prime contractors, sub-contractors, and local industrial defense production associations, and recommend from time to time to the director and associate director general such additional financial procedures or machinery as shall be required to ensure maximum utilization of existing

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tool and plant facilities for defense purposes.

(h) Provide engineering and technical assistance to such prime contractors, sub-contractors, and local industrial defense production associations as may require such assistance in order to participate in defense production.

(i) Perform such other duties and responsibilities as the Office of Production Management may from time to time determine.

OFFICE OF DEFENSE HEALTH AND WELFARE SERVICES

By Executive Order of Sept. 3, 1941, there was established within the Office of Emergency Management of the Executive Office of the President the Office of Defense Health and Welfare Services at the head of which the Federal Security Administrator shall serve as director.

NATIONAL PATENT PLANNING COMMISSION

By Executive Order of Dec. 12, 1941, the President ordered the establishment of a National Patent Planning Commission consisting of five members to be appointed by the President. The Commission is authorized, in conjunction with the Department of Commerce, to conduct a comprehensive survey and study of this country's patent system and consider whether the system now provides the maximum service in stimulating the inventive genius of our people in evolving inventions and in furthering their prompt utilization for the public good; whether our patent system should perform a more active function in inventive development; whether there are obstructions in our existing system of patent laws and, if so, how they can be eliminated; to what extent the government should go in stimulating inventive effort in normal times; and what methods and plans might be developed to promote inventions and discoveries which will increase commerce, provide employment, and fully utilize expanded defense industrial facilities during normal times. The Commission may ap-

point such officers, committees, and sub-committees as it may deem necessary to carry out its functions. The members of the Commission and of the committees and sub-committees as may be formed are to serve without compensation, but shall be entitled to actual and necessary transportation, subsistence, and other expenses incidental to the performance of their duties.

The Commissioner of Patents and his office will assist the Commission, which is also authorized to call upon other offices and agencies of the government for such aid and information as may be deemed necessary for its work. The Commission is to report the results of its investigations and studies, together with its recommendations, to the President.

THE COAST GUARD

By executive Order of Nov. 1, 1941, the President directed that the Coast Guard shall, from that date until further orders, operate as part of the Navy, subject to the orders of the Secretary of the Navy.

All Coast Guard personnel is to be subject to the laws enacted for the government of the Navy: provided, that in the initiation, prosecution, and completion of disciplinary action, including remission or mitigation of punishments for any offense committed by any officer or enlisted man of the Coast Guard, the jurisdiction shall depend upon and be in accordance with the laws and regulations of the Department having jurisdiction of the person of such offender at the various stages of such action; further, that any punishment imposed and executed shall not exceed that to which the offender was liable at the time of the commission of the offense.

The duties of the Coast Guard, which was transferred to the Navy from the Treasury Department, are to enforce any law of the United States upon navigable waters and the high seas. They include the continuous vessel and airplane control of the coasts and harbors, guarding of all commercial vessels, control of radio on all commercial vessels and aircraft,

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inspection of merchant vessels for armament and determining whether the vessels are defensively or offensively armed, and detection of espionage and sabotage. The Coast Guard is also charged with the enforcement of law in Alaska as well as the administration of the United States Maritime Service.

COMMISSION TO INVESTIGATE THE JAPANESE ATTACK ON HAWAII

On Dec. 18, 1941 the President appointed a commission to ascertain and report the facts relating to the attack made by the Japanese armed forces upon the Territory of Hawaii. The purposes of the inquiry and report are to provide bases for sound decisions whether any derelictions of duty or errors of judgment on the part of United States Army or Navy personnel contributed to such successes as were achieved by the enemy and, if so, what these derelictions or errors were, and who were responsible therefor. The Commission convened at the call of its chairman, Associate Justice Owen J. Roberts of the United States Supreme Court. All executive officers and agencies of the United States are directed to furnish the Commission such facilities, services, and cooperation as it may request of them from time to time.

OFFICE OF CENSORSHIP

By executive order of Dec. 19, there was established the Office of Censorship, at the head of which there will be a Director of Censorship. The director shall cause to be censored, in his absolute discretion, communications by mail, cable, radio, or other means of transmission passing between the United States and any foreign country, or which may be carried by any vessel or other means of transportation touching at any port, place, or territory of the United States and bound to or from any foreign country, in accordance with such rules and regulations as the President shall from time to time prescribe. The establishment of rules and regulations in addition to the provisions of this order

shall not be a condition to the exercise of the powers granted in the President's order or the censorship therein directed. The scope of the order includes all foreign countries except such as may hereafter be excluded by regulation.

The order creates a Censorship Policy Board to consist of the Vice President of the United States, Secretary of the Treasury, Secretary of War, Attorney General, Postmaster General, Secretary of the Navy, Director of the Office of Government Reports, and Director of the Office of Facts and Figures. The Postmaster General is chairman. The Censorship Policy Board will advise the Director of Censorship with respect to policy and the coordination and integration of the censorship.

The Director of Censorship will establish a Censorship Operating Board, which shall consist of representatives of such departments and agencies of the Government as the director shall specify. Each representative is to be designated by the head of the department or agency which he represents. The Censorship Operating Board will, under the supervision of the director, perform such duties with respect to operations as the director shall determine. The Director of Censorship is authorized to take all such measures as may be necessary or expedient to administer the powers conferred, and, in addition to the utilization of existing personnel of any department or agency available therefor, to employ, or authorize the employment of, such additional personnel as he may deem requisite.

FEDERAL AGENCIES TRANSFERRED FROM THE CAPITAL

The Bureau of the Budget ordered the removal, recently, of 12 Federal agencies or parts of agencies to other centers in order to alleviate the housing problem in Washington, D. C. The Security and Exchange Commission, Bureau of Old Age and Survivors Insurance of the Social Security Board, Alien Registration and Certification, and Research and Education Division of the Immigration and

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Naturalization Service are transferred to Philadelphia. The Patent Office is removed to Richmond, Va. The Fish and Wild Life Service, National Park Service, Office of Indian Affairs, Employees Compensation Commission, and Railroad Retirement Board go to Chicago. The Rural Electrification Administration and the Farm Security Administration were ordered removed to St. Louis, Mo. The Wage and Hour Division and part of the Office of the Solicitor of the Labor Department are established in Pittsburgh, Penn.

ELECTIONS OF 1941

By THOMAS N. HOOVER
PROFESSOR, OHIO UNIVERSITY

SOUTHERN ELECTIONS

The elections of 1941 were of little interest and had practically no political significance. Wars and threats of war for the United States overshadowed political events. In Virginia, the only state in which a governor was elected, the Democrats, by an overwhelming vote, elected former Representative Colgate W. Darden of Norfolk to the governorship. But Fairfax County, the county embracing Mt. Vernon and the tomb of George Washington, elected Col. R. R. Farr, a Republican, to the state house of delegates. James L. Whitten, Democrat, was elected to fill the vacant seat in Congress from the second Mississippi district.

PENNSYLVANIA

Wilson D. Gillette, Republican, was elected over George O. Wagner, Democrat, to fill the vacancy in the Fifteenth Pennsylvania Congressional District. Republican candidates were elected to the judgeships in Pennsyl-

vania. Cornelius Scully, Democrat, was returned as mayor of Pittsburgh.

NEW YORK CITY

The outstanding event of the elections was the mayoralty contest in New York City. Fiorello H. La Guardia, seeking a third term of four years, was the nominee for four political parties: Republican, American Labor, City Fusion, and United City. He was opposed by William O'Dwyer, the Democratic candidate. O'Dwyer was supported by Governor Herbert Lehman; James A. Farley, former Postmaster General and former chairman of the Democratic National Committee; and Edward J. Flynn, chairman of the Democratic National Committee. This was one of the most abusive campaigns in the history of the city. The dictionary was overworked by both sides in their selection of scorching superlatives. When the heat of the battle had subsided and the smoke had somewhat disappeared, the fiery mayor, by the comparatively close vote of approximately 133,000, was returned victor.

PERIODICAL PUBLICATIONS

American Mercury
570 Lexington Ave., New York City.
American Political Science Review
Menasha, Wis.
American Spectator
683 Broadway, New York City.

Commonweal
386 Fourth Ave., New York City.
Congressional Digest
2131 LeRoy Place N.W., Washington, D.C.
Current History
225 Varick Street, New York City.

COGNATE SOCIETIES AND RESEARCH INSTITUTIONS

Journal of Political Economy
5750 Ellis Ave., Chicago.

Nation
55 Fifth Ave., New York City.

New Republic
40 East 49th Street, New York City.

News-Week
1270 Sixth Ave., New York City.
Political Science Quarterly
Columbia University, New York City.
Time Weekly Newsmagazine (The)
9 Rockefeller Plaza, New York City.

COGNATE SOCIETIES AND RESEARCH INSTITUTIONS

(For further information, the reader may address the following organizations)

GENERAL

AMERICAN ANTIQUARIAN SOCIETY, Worcester, Mass.
AMERICAN BAPTIST HISTORICAL SOCIETY, Upland Avenue, Chester, Pa.
AMERICAN CATHOLIC HISTORICAL ASSOCIATION, Catholic University, Brookland Station, Washington, D.C.
AMERICAN HISTORICAL ASSN., 740 Fifteenth St., N.W., Washington, D.C.
AMERICAN IRISH HISTORICAL SOCIETY, 991 Fifth Ave., New York City.
AMERICAN JEWISH HISTORICAL SOCIETY, 3080 Broadway, New York City.
AMERICAN NUMISMATIC SOCIETY, 156th Street at Broadway, New York City.
AMERICAN SCENIC AND HISTORIC PRESERVATION SOCIETY, 287 Convent Avenue, New York City.
AMERICAN SOCIETY OF CHURCH HISTORY, 5757 University Ave., Chicago, Ill.
CANADIAN HISTORICAL ASSN., Ottawa, Canada.
FREETHINKERS OF AMERICA INC., 317 East 34th Street, New York City.
HISPANIC SOCIETY OF AMERICA, Broadway between 155th and 156th St., New York City.
HOLLAND SOCIETY OF NEW YORK, 90 West Street, New York City.
HUGENOT SOCIETY OF AMERICA, 122 East 58th Street, New York City.
METHODIST HISTORICAL SOCIETY, 150 Fifth Ave., New York City.
MISSISSIPPI VALLEY HISTORICAL ASSN., Cedar Rapids, Iowa.

NEW ENGLAND HISTORIC GENEALOGICAL SOCIETY, 9 Ashburton Place, Boston, Mass.
PRESBYTERIAN HISTORICAL SOCIETY, 520 Witherspoon Building, Philadelphia, Pa.
PROPORTIONAL REPRESENTATION LEAGUE, 309 East 34th Street, New York City.
SOCIETY FOR THE PRESERVATION OF NEW ENGLAND ANTIQUITIES, 141 Cambridge St., Boston, Mass.
STEUBEN SOCIETY OF AMERICA, 369 Lexington Ave., New York City.
THOMAS PAINE NATIONAL HISTORICAL ASSN., North Ave., New Rochelle, N.Y.
UNITED STATES CATHOLIC HISTORICAL SOCIETY, 346 Convent Ave., New York City.
WOODROW WILSON FOUNDATION, 8 West 40th Street, New York City.

POLITICAL

ACADEMY OF POLITICAL SCIENCE, Morningside Hgts., New York City.
AMERICAN ACADEMY OF POLITICAL AND SOCIAL SCIENCE, 3457 Walnut St., Philadelphia, Pa.
AMERICAN POLITICAL SCIENCE ASSN., 305 Harris Hall, Northwestern University, Evanston, Ill.
LEAGUE FOR INDUSTRIAL DEMOCRACY, 112 E. 19th Street, New York City.
WOMEN'S NATIONAL DEMOCRATIC CLUB INC., 50 West 45th St., New York City.
WOMEN'S NATIONAL REPUBLICAN CLUB, 3 West 51st Street, New York City.

DIVISION II

INTERNATIONAL AFFAIRS AFFECTING THE UNITED STATES

THE EUROPEAN AND AFRICAN CAMPAIGNS

BY WHEELER B. PRESTON
AUTHOR AND PUBLICIST

GENERAL

The conflict begun in northwestern Europe in the fall of 1939 spread gradually throughout the continent in succeeding months, involved Africa and the Near East, and engulfed, before 1941 closed, virtually the entire globe in a titanic struggle of unprecedented proportions. Its inception had been due to the insensate vision of one man alone, the delusion of Adolf Hitler that a German master-race would be permitted by rational men to dominate all mankind. In furtherance of his fell scheme, he gained the doleful support of the Duce of Italy who, in losing the Italian empire in Africa, beggared his country and disclosed to the world the inherent weaknesses of Fascism. The military masters of Japan who, for half a century, had worked to subjugate all of Asia, then seized upon an opportunity, seemingly unlikely to recur, and gambled recklessly with the fortunes of their empire by attacking the United States and Great Britain. Hitler well crystallized the basic issues by declaring, at the close of 1940, that "two worlds are in conflict, and one of them must break asunder." It took long, too long, for the democracies to appreciate their danger, but before another year had closed they came to realize at last that this was indeed a war which threatened the very existence of a world of free men.

BALKAN FERMENT

Rumania.—The year 1941 opened with a virtual stalemate in Europe, most of the continent under the Nazi jackboot, and with Great Britain and little Greece alone daring to face the aggressors with courage and resolution. A rising against the Germans in Rumania, which had commenced on Jan. 21, was quickly suppressed, and the country passed completely into Nazi hands, with the result that on Feb. 10 the British Government severed all diplomatic relations with the country. Ex-King Carol crossed the Atlantic by ship early in the year, after narrowly escaping arrest in Spain, from Cuba going to Mexico, where he dreamed of regaining his throne for a second time at the expense of his son Michael.

Bulgaria and Turkey signed a treaty of non-aggression on Feb. 17, but it proved of remarkably short duration. The political leaders of Bulgaria made no attempt to hide their German sympathies, and, within five days of conclusion of the agreement, Nazi staff officers were established in Sofia and openly making dispositions for occupation of the country. The Axis Pact was signed by Bulgaria on March 1. As German troops marched into Sofia, Turkey announced that she considered the new non-aggression treaty null and void. Hitler pushed his schemes for bloodless conquest

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without a pause, while the democracies watched in dismay, seemingly powerless to thwart him.

Yugoslavia.—On March 25 consternation once more seized the Fuehrer's enemies when Yugoslavia signed adherence to the Axis Pact in Vienna, but then the diplomacy of the democracies began to work secretly and swiftly. Within two days Yugoslav military leaders, encouraged by promises of ample, immediate assistance, overthrew in a *coup* the government which they felt had betrayed the country, installed an anti-Axis régime with the boy King Peter II at its head, and on April 5 signed a neutrality and friendship pact with Soviet Russia. This was no sufficient substitute for men and equipment, however, for they were needed instantly if they were to prove of any service.

GREEK TRAGEDY

Aid did, in fact, reach Yugoslavia, but it was "too late and too little," a characterization that had marked, and in days ahead continued to mark, so much of the anti-Axis war effort. In the early hours of March 6 Hitler struck again; it was another of those lightning, whirlwind strokes which so frequently had taken his adversaries completely off guard. The invasion, termed by Secretary of State Hull "barbaric," was on an immense scale, following the pattern of the already familiar German *blitzkrieg*. Across all frontiers Nazi troops poured into Yugoslavia and also into Greece, which had so valiantly withstood Mussolini's efforts for over five exhausting months. Thrace was abandoned by the Greeks almost at once, allowing the Germans to reach the Aegean Sea near the Turkish border on April 7, and two days later the port of Salonika was captured and large bodies of Yugoslav and Greek troops were surrounded.

Resistance to the Germans began to crumble by April 11, at which time British forces, rushed from the campaign in Libya, had come into action in Greece. The assault of German and Italian troops in Yugoslavia was aided also by Hungarians, who occupied the

northeastern area of the country, and the hard-pressed Greeks and British slowly withdrew before the repeated hammer blows of the Nazis. What remained of the Yugoslav army laid down its arms on April 17, and soon the British troops began to leave the Greek mainland for the island of Crete. King George and his government left Athens for Crete on April 23, and German motorized forces entered the heart of the capital four days later. The campaign was virtually over; two more free, liberty-loving countries had fallen to Hitler.

BATTLE OF CRETE

Some 48,000 British troops out of 60,000 originally landed in Greece were evacuated to Crete, and there they had a respite for some three weeks. On May 20 Hitler struck yet again. At early dawn thousands of German soldiers reached Crete by air, some paratroops (as they were known in military circles), others borne in gliders and transport planes. Nazi superiority in the air decided the outcome of the fighting within 12 days, Italian troops cooperating in the later stages. The British reported losses of 12,790 men in Crete, half of them being Australians and New Zealanders, who also had borne the brunt of the burden in Greece.

DISPOSITION OF BALKAN TERRITORY

In recognition of services rendered to the Axis cause, Italy received from Germany part of the territorial loot in the Balkans. Croatia and Dalmatia went to the Fascists, who revived the ancient crown of Zvonimir for the former, with the Duke of Spoleto as sovereign, and made Dalmatia an Italian governorship, headed by an old party official. Another state restored at this time was the small principality of Montenegro (since the first World War incorporated in Yugoslavia), the new puppet ruler being Michael, grandson of the former ruler, King Nicholas, and nephew of Queen Elena of Italy.

ITALIAN AFRICA

First Libyan Campaign.—The year 1941 opened with a series of British

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successes in Libya, the invaders from Egypt capturing Bardia, Tobruk, and Derna. According to figures later published by Mussolini, the Italians in Libya at the time of the British invasion had over 400,000 men, with an immense quantity of materiel, and this formidable army was utterly routed by some two divisions of Empire troops. Bengazi fell on Feb. 7, but the British did not continue the pursuit as far as Tripoli, the important port near the Tunisian frontier, reasons of diplomacy dictating the necessity of withdrawing virtually all troops to the mainland of Greece. The unhappy results have been noted above. It was unfortunate, too, for the British position in Libya, because the disorganized Italians, reinforced in men and courage by the Nazis, took the offensive and quickly drove back the skeleton force of Empire soldiers left to hold the territory. On April 3, Bengazi was recaptured by German motorized forces, which continued eastward without a pause, swept to the Egyptian frontier within ten days and left only the port of Tobruk in British hands. Onset of hot weather precluded further operations for some months, both sides getting ready to resume the fighting at the earliest opportunity.

Eritrea and Somaliland.—Meanwhile, the British had been more successful in the Italian East African Empire. Early in January, 1941, their forces began to attack Ethiopia from both Kenya Colony and the Anglo-Egyptian Sudan, and to advance on Italian Somaliland and Eritrea from all sides. The Fascists withdrew from the Sudan frontier of Eritrea toward their railheads, and by March 7 all Italian troops had been driven from their Somaliland colony. For two weeks the Eritrean mountain city of Cheren was besieged before surrendering to British and Indian forces on March 27, and on the same day troops from South, West, and East Africa, which had crossed the sands of Italian Somaliland, captured the Ethiopian Moslem city of Harar. The conquest of Eritrea proceeded apace. Asmara, the capital, was occupied on April 1,

and with the fall of Massaua, the colony's port on the Red Sea, a week later, the British campaign was brought to a successful conclusion.

Ethiopia.—In Ethiopia, too, British forces maintained a steady advance. Adowa and Adigrat were captured on April 5, and the following day Addis Ababa, which had been occupied by the Italians since May 5, 1936, surrendered without resistance. Debna Markos and other towns were quickly taken by the British, and on May 5 Haile Selassie, exile in England now ended, sat once again on his throne in Addis Ababa as Emperor of Ethiopia. Surviving Italian forces withdrew to fortresses perched on mountain tops far in the interior of the country, and on May 19 the virtual end of Fascist rule in East Africa was signaled at Amba Alaji by the capitulation of the Duke of Aosta, Italian Viceroy, with 7,000 of his men.

Second Libyan Campaign.—With return of cool weather in the fall of 1941, both Axis and British forces made ready to resume operations in Libya. In a surprise attack on Nov. 19, the British advanced 150 miles on a wide front, and then there ensued desperate and bitter fighting on a scale unparalleled in the earlier campaign. Names already familiar came once more into the news. Bardia remained for some time in Axis hands, while the gallant garrison of Tobruk fought its way out to join hands with its rescuers. Soon the main battle front was in the Rezegh area, which the Axis forces were trying to encircle, but the British, now better equipped than ever before, pressed their enemies backward. Late in December, Bengazi was once more in British hands, and on this occasion, without venturing to pause, the forces of the Empire continued to press westward into Tripolitania, aiming to reach the port of Tripoli before hot weather again should put a stop to operations.

THE NEW ORDER

In a New Year's speech as 1941 dawned, Hitler had promised his people "the greatest victory in our history," but though he made im-

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mense conquests of territory he was unable to provide the longed-for peace. As the war swept into its third year on Sept. 1, 1941, active Axis belligerents included, besides Germany and Italy, Rumania, Hungary, Croatia, Slovakia, and Finland, while conquered or occupied countries comprised Belgium, Bulgaria, Denmark, France, Greece, Netherlands, Norway, Poland, and Yugoslavia. With the passing months, however, the problems confronting the Nazi leaders appeared to be becoming ever more insurmountable. The subject countries, deprived of contact with all the world outside Europe, were unable to reorganize their economic systems, and demands made upon them by the Germans for aid in men, equipment, and other services were creating a spirit of wrathful dissatisfaction that was fraught with ill omen for their conquerors. The New Order, in which all would bow before a master-race of Germans, could not be enforced in 1941, and there seemed to be small likelihood of its imposition in the calculable future.

Some countries, however, had a foretaste of what might, in the worst circumstances, be in store for them. Mussolini had long since ceased to preserve even a semblance of equality with Hitler, the master mind of the Axis. His soldiers failed miserably both in Africa and in Greece, his air force was negligible, and in the Mediterranean, where his navy was numerically far superior to the British, his sailors had been unable even to keep open the seas to Libya. Rationing of foodstuffs, clothing, and fuel was as stringent as anywhere in Europe, and when the Italians began to voice their discontent German forces made their appearance in many parts of the country. A victory that would liberate the conquered peoples of Europe would also free the Italians from the Nazi yoke, whatever might be in store for the Fascist leaders.

THE PLIGHT OF FRANCE

The plight of the French nation was, perhaps, even more tragic. Defeated in war, their country partitioned into

occupied and unoccupied zones, without a voice in their government, the people of unhappy France were powerless. Marshal Pétain was seemingly convinced that his country's future lay within the orbit of Hitler's New Order, and he oriented his policy accordingly. By a decree dated Feb. 9, Admiral Jean Darlan became Vice Premier and Foreign Minister in addition to retaining the portfolio of the Navy, taking the place of Pierre-Etienne Flandin, who had resigned. The following day Pétain also named Darlan his successor as Chief of State in the event of death or disability, filling the post which Laval had occupied until Dec. 13, 1940. Yielding to Nazi pressure, early in March Pétain commenced a series of concessions to Japan in French Indo-China which eventually gave her complete domination of the colony, and because France allowed the Nazis to establish air bases in Syria, that Near East country was occupied by the British in June.

Meanwhile, French automobile and other factories in the occupied area were engaged in turning out equipment in immense quantities for Hitler's war machine. Without protest from Pétain, Nazi and Fascist agents in ports of unoccupied France were able to build up large stocks of foodstuffs, vegetable oils, and phosphates. On Aug. 12 Pétain, in a broadcast speech, announced that Darlan had received additional responsibility as Minister of National Defense, having direct control of all land, sea, and air forces, and at the same time the Chief of State issued a decree suspending all political parties, strangely inconsistent with his closing declaration that "Liberty still lives within us, proud and strong." Yet another post went to Darlan on Nov. 20 when he was given control of French North Africa in succession to Gen. Maxime Weygand, whose adherence to the policy of cooperation with the Axis was widely questioned. These acts, and the inability of Hitler to conclude a definitive peace treaty with France before he had disposed of his other enemies, aroused a steadily-growing

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feeling of unrest among the French people which Pétain was unable to suppress. In August, a French citizen shot and seriously wounded Laval and an associate in Versailles, and two months later senior German officers were killed by civilians in Nantes and Bordeaux. Nazi vengeance was swift and terrible, 100 interned hostages, who could not possibly have been the culprits, being shot to death in cold blood.

THE RUSSIAN BEAR

With the Balkans firmly under his domination, with the prospect of invading England seemingly more unattractive than ever, Hitler was compelled to look farther afield in the early summer of 1941 in furtherance of his plans for world conquest. Then it was that he made what may come to be recognized as the greatest blunder of his career. Without the least warning he turned upon Soviet Russia, showing his complete lack of gratitude and fidelity, showing his readiness to destroy those who had helped him as quickly and ruthlessly as if they had worked against him. In 1936 he had declared Communism to be "World Enemy No. 1," but three years later, after forging the anti-Comintern Pact, he did not hesitate to backtrack his steps and sign a non-aggression agreement with the "scum of humanity" whom he had so frequently bitterly denounced.

Stalin had signed neutrality pacts with Turkey and Japan in March and April of 1941, and on May 6, while retaining his place as secretary of the Communist party, he made himself Premier of Soviet Russia, replacing in that post V. M. Molotov who nevertheless continued as Foreign Commissar. That was the position when, on June 22, the blow fell. As had so frequently happened before, Nazi troops struck before Hitler gave any hint of his intentions. As before, German planes preceded the infantry, striking at many places from the Baltic to the Black Sea, and followed by mechanized divisions from a number of points in East Prussia, Poland, and Rumania. "The task," announced Hitler's proc-

lamation which followed invasion, "is to safeguard Europe and thus save all. I have therefore today decided to give the fate of the German people and the Reich and of Europe into the hands of our soldiers." Thus began a phase of the war more terrible in carnage and destruction than any which had preceded it, a phase of which the end was not in sight as the year 1941 closed.

President Roosevelt declared that aid to Russia would be in the interests of United States defense, and British assistance was pledged, while Josef Stalin broadcast to his people, calling for a "scorched earth" policy and urging that the citizens of the Soviet Union "fight to the last drop of blood." In doing just that the Russians belied the opinion of many sceptics. They deliberately laid waste their own soil and died in millions to save their land.

THE RUSSIAN CAMPAIGN

Britain and Russia signed a mutual aid pact in July, just after the Germans had claimed to have broken the Stalin Line (if such a thing there were) "at all decisive points." Smolensk shortly fell into Nazi hands, and on July 30 the Russians concluded in London an agreement with the Polish government-in-exile restoring to Poland areas taken by the Soviet in 1939. Week after week the Russian troops continued to give ground before the Nazi onslaught but maintained their lines intact, both sides making extravagant claims as to the losses sustained by the other forces.

Late in August, Hitler and Mussolini met on the Russian battlefield for a five-day conference, discussing "the New European Order that will emerge from this victory," but up to this time results had certainly not been decisive. However, the great city of Kiev fell to the Germans on Sept. 20, and the Nazis were approaching both Leningrad and Moscow, but the Russians were undaunted, and nine days later it was announced that representatives of the United States and Great Britain were *en route* to Moscow to discuss the extent of aid that could be

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extended by the democracies. Hitler, confident that the battle was more than half won, returned to Berlin from the Ukraine front, and in a speech to his people declared that Russia "is already broken and will never rise again." Much was to ensue that would disprove the accuracy of this boast.

Rumanian troops under Nazi command took Odessa, Soviet port on the Black Sea, on Oct. 16, and the same day it was announced that the Russian capital was being removed to Kuibeshev (Samara) some 550 miles southeast of Moscow. A state of siege was announced for Moscow, as already it had been done in the case of Leningrad, but still the Russians fought on, giving ground only after the most desperate fighting. A shake-up in the Soviet military command was announced on Oct. 23, and Khar'kov was lost two days later, but these facts apparently made little real difference to the course of the campaign, for the Russians still resisted doggedly. The Germans forced an entrance into the Crimean Peninsula before the close of October, and Simferopol, capital of the Crimea, was lost on Nov. 2, but the ferocity of the fighting on the part of the Russians never lessened, and always their armies, despite Nazi claims, were saved from destruction.

Gradually, notwithstanding further German successes, such as the capture of Rostov, the gateway to the Caucasus, a change began to creep over the situation. The Nazi drive along most of the long front began to slow down, clogging mud, sharp frosts, and wet snows foreshadowing the advent of the terrible Russian winter. The desperate efforts of the Germans to force a decision before another year set in came to naught; Hitler, for the first time, had failed.

Although Russian territory larger than pre-war Germany had been overrun, the Nazis were unable to annihilate their enemies, and until that was done there was nothing of importance accomplished. Russia's historic ally, the very hard winter, was again coming to her assistance, and while

the Germans were close enough to Moscow to look into the city they were unable to enter her streets. Under the weight of heavy counter-attacks the Nazis were compelled to abandon Rostov, and early in December they were forced to admit that the Russians were stronger in men and materiel than they had calculated and that the idea of reaching Moscow before Christmas must be given up.

It was a bitter pill for the German people, who had never wavered from their conviction that the Fuehrer was never wrong and that their armies were irresistible. The retreat was not a rout, but it was the first major withdrawal of the Nazis in the present conflict. Along the entire front the Germans were compelled to give way, not for great distances but at least in the reverse direction for the first time. The Germans lacked warm clothing for their troops, they lacked gasoline for their machines, and, ultimately, they lacked leaders who believed that the task was not beyond their powers under prevailing conditions. Hitler, the super-strategist, took over supreme command of the armies from General Brauchitsch, and went to the front to face the even more bitter weather due in the approaching New Year.

BATTLE OF THE ATLANTIC

Through 1941 the British Navy and mercantile marine maintained its supremacy on the world's sea lanes with difficulty, but with a success that belied boastful Nazi claims of destruction. In July the British Admiralty stopped giving out monthly figures of shipping losses, but at that time admitted a total loss of 6,000,000 tons of shipping since hostilities began, a figure far less than that claimed by the Germans. Hitler had confidently asserted that in the Battle of the Atlantic he would starve Great Britain into submission, but so far were his boasts falsified that, at the year's end, the British Government was able to announce food stocks greater than at the outset of the war over two years earlier. As the year progressed the United States Navy gave ever

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increasing assistance to the British, and in September the President ordered war vessels to shoot on sight and to aid in protection of all shipments from North America as far as Iceland. The Germans improved submarine tactics in 1941, their U-boats operating in packs of four or five, directed by long-range scouting aircraft, and attacking vessels within convoys without the necessity for rising to the surface to shoot. These methods produced appropriate retaliatory measures, and before the year closed it appeared as if the submarine was so countered as unlikely in the future to influence the eventual outcome of the war.

Major naval actions were few, though dramatic. In the Mediterranean on Jan. 10, 1941, German and Italian planes attacked a British fleet, sinking the cruiser *Southampton* and damaging the battleship *Malaya* and the aircraft carrier *Illustrious*. Thereafter the United States Government threw open its shipyards for the repair of British ships of war, an act of "non-belligerency" of inestimable assistance to its friends. The Nazis announced on March 22 successes of its battleship squadron in the North Atlantic in operations against British convoys, but this triumph was short-lived. The two principal vessels in the squadron, the battleships *Gneisenau* and *Scharnhorst*, found the pace too hot and soon were forced to run for shelter to the French port of Brest. Here, until the close of the year, they were constantly subjected to bombing by British aircraft operating from the English coast, and were kept in such a damaged state that they were unable again to put to sea.

BATTLE OF CAPE MATAPAN

In what was claimed to be the greatest naval engagement since the Battle of Jutland in 1916, a British fleet defeated the Italians in the Battle of Cape Matapan, fought in the Ionian Sea off the coast of Greece. The Fascists, lured by British cruisers within range of their battleships, lost three cruisers and two destroyers, at

an admitted loss to the British of two aircraft.

LOSS OF THE ARK ROYAL

From the early weeks of the war the Nazis had made repeated claims that they had sunk the aircraft carrier *Ark Royal*, only to be denied by the British Admiralty, but the latter was the first to announce, on Nov. 13, 1941, the loss of the vessel, which was torpedoed off Gibraltar and sank later while under tow.

SINKING OF THE BISMARCK

Off the eastern coast of Greenland, on May 24, British aircraft sighted the new 35,000-ton German battleship *Bismarck*, accompanied by the new cruiser *Prinz Eugen*, and within a few hours they were intercepted by the old British battle cruiser *Hood* and two light cruisers. Five minutes after the firing of the first shot, the *Hood* was struck by a heavy shell and blew up with the loss of her entire crew, and then there ensued a chase of the German ships which gripped the attention of the entire world. The *Bismarck*, its speed reduced through damage caused by a British torpedo plane, was lost in the Atlantic mists for two days, while its escort, the *Prinz Eugen*, fled to Brest, there to endure aerial bombings until the end of the year. As dusk was falling on May 26, the *Bismarck* was located and attacked by other torpedo planes. With her rudder and propellers damaged, the great vessel lay helpless when British battleships, cruisers, and aircraft carriers rushed to the scene the following morning. Encountered 400 miles off the French coast, the *Bismarck* was unable to make effective resistance. After repeated torpedoings, she sank at 11.01 a.m. on May 27 with the loss of all save 100 of her crew of 2,400 men.

AMERICAN INVOLVEMENT

Through 1941, as noted above and elsewhere in this work, the United States drew ever closer to open hostilities with Germany and her allies. The President, in his Annual Message on Jan. 6, reminded members of Con-

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gress that "a dictator's peace" would bring "no security" to the United States, and that "those who would give up essential liberty to purchase a little temporary safety deserve neither liberty nor safety." With this warning, the country saw in increasing impatience its ships and nationals repeatedly attacked by Axis vessels. The freighter *Robin Moor* was torpedoed and sunk in the South Atlantic (May 21); the merchant ship *Sessa*, of Panamanian registry, was sunk off Iceland (Aug. 17); the *Steel Seafarer* was sunk by a bombing plane in the Red Sea (Sept. 5); the *Montana* was torpedoed and sunk off the east coast of Greenland (Sept. 11); the freighter *Pink Star* was torpedoed between Greenland and Iceland (Sept. 19); the tanker *I. C. White* was sunk in the South Atlantic (Sept. 27); the *Bold Venture*, of Panamanian registry, was sunk off the south coast of Iceland (Oct. 16); and the steamship *Lehigh* was torpedoed in the South Atlantic off the coast of Africa (Oct. 19).

These attacks were declared by Secretary of State Hull to be "in harmony with all the definitions of piracy and assassination," giving fresh evidence of a Nazi plan to control the high seas as a prelude to world domination. His indignation was heightened by attacks on three United States destroyers: the *Greer* escaped from two torpedoes fired at her off Iceland when *en route* with mail (Sept. 5); the *Kearny*, on convoy duty, was torpedoed and damaged southwest of Iceland (Oct. 16-17); and the *Reuben James*, on convoy duty in the same area, was torpedoed and sunk (Oct. 31).

Besides sending forces to garrison Greenland and Iceland, the United States proceeded apace with the construction of naval and air bases at the eight points off the eastern seaboard made available by Great Britain in 1940. This chain of outposts was added to on Nov. 24, 1941, when American forces were landed at Surinam (Dutch Guiana), on the northeast coast of South America, to protect the bauxite mines which provided

upward of 60 per cent of the requirements of the American aluminum industry.

LEASE-LEND ACTIVITIES

Under the terms of the Lease-Lend Act, signed March 11, 1941, the United States appropriated funds to assist the enemies of the Axis powers in many ways. Ordnance, aircraft, tanks, vessels, and military equipment were manufactured; agricultural, industrial, and other commodities were provided; and defense articles in great variety were tested and reconditioned under the provisions of the act. Large parts of these services were made available to Great Britain during the year, and lesser amounts were furnished to China and to the Soviet Union. The pressing problem was to find sufficient shipping to transport these goods, and this was to be solved by a large-scale shipbuilding program in the United States of unprecedented proportions.

Through most of 1941 American workmen were employed in Northern Ireland in large numbers building additional bases; tank and aircraft technicians set up and operated repair depots in Egypt to service the planes and tanks furnished to the British forces; American engineers were at work in Iran putting the railroad in condition for the transport of Lease-Lend supplies to Russia in large quantities; and motor transport experts and aircraft personnel were sent to aid Chiang Kai-shek, leader of "Chungking China." In addition, Pan American Airways undertook on behalf of the government the opening of a new airline, one of the world's longest, from Miami to Leopoldville, in the Belgian Congo, 8,693 miles in length. Over this route, by way of Brazil and West Africa, military personnel could be transported most of the way to East Africa, and on the return journey the transport planes could bring back ferry pilots who had flown bomber planes from the United States across the African continent. To implement this service, the British authorities provided facilities in Italian Eritrea for the American Gov-

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ernment to establish its own bases of various types for the servicing of the equipment supplied to Britain and her allies by the United States. The country went as far in affording assistance as was possible under any interpretation of the term "all aid short of war."

BRITAIN AT BAY

For the first half of 1941 Great Britain faced the Nazi strength virtually single-handed. During these bleak and bitter months the British Isles awaited imminent invasion from the continent of Europe, the while working with desperate speed to raise more home defense forces, to strengthen fortifications, and to increase the output of armaments. "Give us the tools," cried Prime Minister Churchill, "and we will finish the job," but the task seemed overwhelming. The government had to wage campaigns over vast stretches in North and East Africa, to find troops for garrisons from Gibraltar to the Orient, to conduct military operations in southeastern Europe and various parts of the Near East, and by its example to encourage resistance by all liberty-loving peoples. The undertaking was immense beyond precedent, but, despite repeated setbacks, it bore fruit. Parliament, although it had conceded sweeping authority to the Cabinet, retained its prerogatives of criticism, frequently finding fault with the conduct of the war but never wavering in its support of Prime Minister Winston Churchill.

March was marked by the signing of the American Lease-Lend bill by the President, and by his approval of the release of quantities of war materials to Great Britain, and from that time American aid to the Axis enemies became of steadily growing importance. The British position on the Atlantic sea lanes was further improved by the United States garrisoning Greenland in April and with augmentation of Canadian forces in Iceland by American troops in July, while the freezing of Axis assets in the United States in June was also of aid to Great Britain

by still further hampering her enemies.

THE FLIGHT OF HESS TO SCOTLAND

A world sensation was caused on May 10 by the arrival in Scotland of Rudolf Hess, deputy leader of the Nazi party and its third ranking member, designated at the outbreak of the war to become head of the Reich after Hitler and Goering. The cause of his flight by air from Germany was not officially explained, the British Government being satisfied to intern him and to keep silent as to the motives for his coming.

GOVERNMENTS-IN-EXILE IN LONDON

London was not merely the headquarters of the British effort in all parts of the world, and by all the Dominion governments, for it also provided a refuge for the "free" governments of subjugated countries. Here were governmental agencies of Poland, Norway, Netherlands, Belgium, Greece, Czecho-Slovakia, and Yugoslavia, all maintaining some degree of contact with their conquered peoples and with the United States through Anthony J. Drexel, Minister to the Governments-In-Exile. In addition, the Free French administration of General de Gaulle, which was active in many fields, operated from London. Parts of the French colonial empire and most of the French possessions in the Pacific owed allegiance to de Gaulle rather than to Vichy France, and Free French troops fought in Libya, Italian East Africa, and Syria.

ST. PIERRE AND MIQUELON

Some embarrassment was caused to the United States Government (still with an ambassador in Vichy) when Free French forces arrived in December at the small islands of St. Pierre and Miquelon, off the coast of Newfoundland, and took possession in the name of de Gaulle. The fears felt in Washington were that in retribution Marshal Pétain might facilitate the occupation of French African bases by

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Axis forces, but no government appeared willing to take steps to expel Vice Admiral Emile Muselier, leader of the invading expedition.

AID TO RUSSIA

When Hitler invaded the Soviet Union on June 22, Winston Churchill promptly announced that, while he would not unsay the bitter things that he had said in the past about Bolshevism, "any man or State who fights against Nazism will have our aid," and with the United States he issued a joint undertaking on Aug. 15 to confer with a view to offering Russia "the very maximum of supplies."

ATLANTIC CHARTER

The day before this invitation became known, the world had news of a secret meeting somewhere on the Atlantic between the Prime Minister and President Roosevelt. On that occasion the two leaders agreed on an historic joint declaration of mutual aims (Atlantic Charter), setting forth eight steps toward a "better future for the world." In summary, the Charter provided: 1. No territorial or other aggrandisement by the United States or Great Britain; 2. Territorial changes only through self-determination; 3. "All peoples" to have a right to choose their own forms of government; those forcibly deprived of the right should have it restored; 4. Free international trade; 5. World-wide cooperation to secure "improved labor standards, economic adjustments and social security"; 6. "After the final destruction of the Nazi tyranny," assurances of a secure peace, of "freedom from fear and want"; 7. Freedom of the seas; 8. "Abandonment of the use of force," disarming of aggressor nations, and lightening "for peace-loving peoples the crushing burden of armaments."

While the two statesmen were formulating these principles, high-ranking military and governmental officials of both countries discussed a wide range of mutual problems relative to Lease-Lend aid and steps to be taken jointly in the face of common dangers.

BRITISH WAR PRONOUNCEMENTS

Winston Churchill spoke to the world again on Nov. 10, once more illustrating the closeness of the ties by that time existing with the United States, when he said: "Should the United States become involved in war with Japan a British declaration will follow within the hour." Great Britain took, too, a realistic view of the situation in Russia when, on Dec. 7, she declared war on Finland, Rumania, and Hungary, all of which countries were fighting alongside the Germans. On the following day, without waiting for the action of Congress, Prime Minister Churchill announced in the House of Commons that his country considered herself in a state of war against the Japanese Empire.

CHURCHILL IN THE UNITED STATES

With the United States now formally ranged alongside Great Britain in the struggle against the totalitarian powers, Winston Churchill visited Washington during December, 1941, and in the Senate chamber he addressed assembled members of Congress in memorable words. He concluded with a noble peroration: "Still I avow my hope and faith, sure and inviolate, that in the days to come the British and American people will for their own safety and for the good of all walk together in majesty, in justice and peace."

THE UNITED STATES AND JAPAN

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On Dec. 7, 1941, the long period of suspense in the relations between the United States and Japan was abruptly ended by the surprise attack on Pearl Harbor, Honolulu, and other American outposts in the Pacific. The following day President Roosevelt sent a message to Congress asking for a declaration of war against Japan. The message was approved unanimously by the Senate and with but one dissentient by the House. Developments following this pronouncement will be mentioned in their order but, to give this sketch consecutiveness, it is necessary to revert to the diplomatic clashes and the several acts of economic pressure which preluded the unhappy explosion, an explosion no less unhappy because long regarded by so many as inevitable.

AMERICAN POLICY AND GREAT BRITAIN

The simplest approach to the subject is to note that, from the beginning of 1941, American foreign policy fell more into line with that of Great Britain and the other powers engaged in resisting Axis domination. The British-American alliance, for such it practically became, step by step achieved, drew with it a stiffening of American policy in opposition to the "New Order" plan of Japan and in support of General Chiang Kai-shek's claim to represent the people of China. That this policy tended to become more and more "hard-boiled" month by month will be obvious as the more prominent happenings of the year are recorded.

PREMIER KONOYE'S POLICY

January commenced with Premier Konoye of Japan promising a new foreign policy and a new industrial set-up. The promise aroused some degree of hopefulness on this side of the Pacific. But when it was perceived

that this involved further cooperation with Germany and Italy the American reaction came with a great shock, at least to Tokyo. Japan protested that the new alignment was in the interest of Pacific peace and that the Empire was far from committing its destiny to the hands of Hitler. Washington remained unconvinced.

To many outsiders at this time Japanese foreign policy seemed sadly adrift, but in Japan itself the fear prevailed that closer ties between America and England, together with the increased support given to Chiang Kai-shek and Allied concern over the French Far East, marked a policy of "encirclement" from which Japan could only extricate herself by further association with Germany.

On the other hand, both in Great Britain and in the United States, the view prevailed that the problems of the Far East were becoming interlocked with those of western Europe and the Mediterranean; hence the concern of London over the security of Singapore, the concern of Washington over the fate of the Dutch East Indies, and the concern of both over what disposition might be made by Vichy of French Indo-China. On both sides a profound distrust of motive created alarm which might easily pass from the stage of emotion to that of action. Either side might insist that "protective occupation" of this or that region was an act of self-defense and either side might regard the proclamation of defense areas by the other side as the precursor of, if not an incitement to, hostilities.

THE DIPLOMATIC FRONT

Meanwhile, on the diplomatic front, Foreign Minister Matsuoka and Ambassador Nomura endeavored to allay American suspicion. The ambassador continued to declare the thought of war between the two nations to be

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"unthinkable." But the effect of friendly speeches was largely nullified by Matsuoka's visits to the Axis capitals. Americans continued to assert vehemently that a secure peace could come only through the entire abandonment of the Japanese "New Order" policy. The questions persisted: What was Matsuoka's purpose in visiting Rome, Berlin, and Moscow? What was the motive behind England's declared intention to link Burma to China by rail? What, again, was the purpose behind the visit of American warships to Australasia? Surmises on such points easily begat suspicion.

With suspicions adroitly publicized, prospects for a peaceful settlement of difficulties, or even the creation of an atmosphere favorable for debate, were small. So clearly was this the case that, when rumors of "exploratory peace terms" from Japan were conveyed to Washington, these (it was said) were received "with both amusement and derision." The Gallup polls, moreover, at this time showed 60% of the participants believing in an imminent seizure by Japan of Singapore and the Dutch East Indies.

JAPAN, CHINA, AND THE DUTCH EAST INDIES

Before the end of May, when C. E. Gauss went to China as advance agent for large-scale relief of Chungking, the effect was naturally to stir Chiang Kai-shek to greater activity and to encourage the Netherlands Indies to break off the negotiations which had been dragging on with Japan. As for the Japanese non-aggression pact with Russia, it was regarded at Chungking as a bid for Communist withdrawal from the war. An added grievance of the time was the seizure at Haiphong of goods consigned to Chiang by the United States. Foreign Minister Matsuoka coincidentally was quoted as saying that, if the United States joined in hostilities against Germany, Japan would certainly fight. Added point was given to the statement by the blunt remark of Oikawa, Minister for the Navy, that continued economic pressure on Japan must compel

the Empire to take up arms in self-defense.

On the American side of the Pacific closer approach to hostilities came with President Roosevelt's promise of further aid to China and with the extension of export control to the Philippines. The half-hearted negotiation between Japan and the Dutch Indies was obviously near a break. The parties to disputes, which by this time encircled the globe, no longer trusted one another. Absolute incompatibility existed between Matsuoka's reaffirmation of loyalty to the Axis as "the immutable basis of Japan's foreign policy" and Waka-sugi's statement at Chicago that there was no question as between Japan and the United States not "intrinsically capable of peaceful and amicable settlement."

JAPAN AND RUSSIA

Diplomacy, nevertheless, moved at snail-like pace. In April the Moscow-Tokyo non-aggression pact was signed, and soon thereafter Nomura is said to have approached Secretary of State Hull with the suggestion of a similar agreement with the United States. This included the request for recognition of "the inviolability and integrity" of Manchukuo and the Mongolian People's Republic. Washington's response was not encouraging, and almost at once Japan was charged with supplying Germany with food by way of the Siberian Railway. More difficulties cropped up over the Dutch East Indies, and Yoshizawa threatened to leave Batavia. Moreover, America was strengthening her ties with the enemies of Japan, and Associate Justice Frank Murphy of the U. S. Supreme Court went to the Far East to act on "coordination of our activities with those of the British."

It was plain that, whatever feelers were put forth for accord, were "off the record" and that Japanese commitments to the Axis constituted an insuperable barrier to any real understanding. So, while the optimistic Ambassador Nomura still expressed his firm "conviction that war must be

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kept from spreading to the Pacific," by mid-June the situation had become ominous. Washington scarcely troubled to deny that "high tariff walls, economic blocs, and preferential trade agreements" amounted to what might be described as an economic blockade of Japan. Such a policy, it was retorted, had been adopted deliberately as punishment for aggression. And the punishment was fast passing from the realm of economics to that of politics.

As the coalition of the ABCD powers became more definite its members could not refrain from noting with satisfaction that the Japanese pressure on Batavia had reached a deadlock. Great Britain, commending American aid to China, declared: "Now is the time for cool indifference to the plight of Hitler's oriental partner." The closer economic relations, for the time being, between Russia, Germany and Japan provided small compensation.

NEW CHINA INCIDENTS

On June 15 General Yamashita declared cryptically: "In a short time something great will happen," but what this was no one was allowed to guess. Perhaps it was still hoped to end, by force or by negotiation, the Chinese "incident." Renewed bombardments of Chungking, however, only brought fresh trouble through the narrow escape of the U.S.S. *Tutuila* from serious damage. Inevitable protests were followed by more or less satisfactory adjustment, but not before the attitude of the ABCD powers had still further stiffened. There was now a curt announcement of the termination of the Batavia negotiations: "The Japanese Government has decided to discontinue" them, while still holding fast "to her just and fair contention of the right to share with third Powers the economic fruits of the Netherlands Indies."

Before the end of June, however, more complications were added to all the above through the German invasion of Russia. To this the first official Japanese reaction was an icy silence. Some even gained the impres-

sion that Japan might desert the Axis. This impression was speedily dispelled, but a joint Nanking-Tokyo declaration against communism proved a rather ineffective counterblast to the new alignment.

LOOMING WAR CLOUDS

The net result of these moves was to make war in the Far East more likely than ever. "Britain, Russia and the United States," declared Washington, "now have a common enemy."

With the entrance of Russia into the war, Vladivostok now came into the picture as a menace to Japan by air. The fact that American aid was now reaching Russia by this route challenged the Empire to cut off these supplies even as she was trying to cut off those to Chungking by the Burma Road. With Owen Lattimore's appointment as American agent for aid to China, the United States was definitely ranged as one of Japan's foes. There was scant comfort in the newly accorded recognition of Nanking by Italy, Slovakia, Rumania, Croatia, Spain, Belgium, and Germany. Ishii's protest over American help given to China was rather pathetic: "I must say that it is not a friendly attitude."

CHANGES IN TOKYO

In early July came big decisions in Tokyo. "Important national policies to meet the current situation" were announced in what Matsuoka described as "a supreme emergency of a very grave nature." To this a still graver footnote was added by the cancellation of sailings on the part of Japanese shipping. It seemed likely that Japan would blockade Vladivostok. "The question has not been decided," declared Ishii.

With the fourth anniversary of the Sino-Japanese "incident" nervousness increased everywhere. Some Americans (like Paul McNutt) were urging that "the time has come to act." Chungking pleaded for "an all-out-front cooperation." Yet, for the time, Japan remained conciliatory and decided against the declaration of a "safety-zone."

American temper was somewhat

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shorter, for before the end of July came the freezing of Japanese assets in American territory and the severance of trade ties. In Washington the act was described as "a dramatic end to the policy of appeasement." Japan naturally asked when the policy of "appeasement" had commenced, and was accordingly bitter. But the new Foreign Minister Toyoda and U. S. Ambassador Grew continued to meet on friendly terms. Great Britain, meanwhile, had joined in the freezing policy, while Japan, though continuing to pay interest and sinking-fund installments on her dollar bonds, retaliated by freezing British and American assets.

JAPAN AND INDO-CHINA

New cause for friction presently appeared through Japanese pressure on French Indo-China and negotiations with Vichy for some form of protectorate. Vichy viewed this as a precaution against occupation of the territory by the Allies, while America regarded it as a fresh act of aggression. Great Britain was nervous over Japanese proximity to Thailand and the Burma Road.

While the British were preparing, as Foreign Secretary Eden declared, to be "tough" over southeastern Asia, and putting pressure on the United States to "go the whole way," Russia was still concerned over the menace to Siberia. Japan was mostly troubled over increasing economic restriction, maintaining that "the artificial exclusion of Japan from supplies merely hastens the cause of self-sufficiency in the Western Pacific." But, with Secretary of State Hull insisting that the United States could not even discuss the settlement, except on the basis of the 14 points enumerated in 1937, a complete deadlock was indicated.

ROOSEVELT-CHURCHILL MEETING

From the Churchill-Roosevelt Atlantic meeting nothing came out bearing directly on Japan, which country, indeed, had but little quarrel with the eight points in the abstract. But, though in Tokyo a desire was evi-

denced to come to any terms which might be brought within the scope of the "New Order," in East Asia the growing proof of British-American co-operation was too strong to be brushed aside, and Japan's commitments to the Axis Pact hung on her shoulders like "the Old Man of the Sea." Already teetering on the edge of war, Japan heard with fresh misgiving of President Roosevelt's raising the duty on crab-meat and the denial of all export of crude petroleum; and, again, of Prime Minister Churchill's declaration (Aug. 24) that "in the event of Far Eastern trouble we shall, of course, range ourselves unhesitatingly on the side of the United States." There was also the increased dispatch of tankers to Vladivostok.

Premier Konoye's personal appeal to President Roosevelt awakened some hope but, so far as the general public learned, brought no sympathetic response. The conversations between Nomura and Hull remained unpublicized. Secretary Hull merely remarked: "The Conference was very interesting," and Nomura smiled. American military missions to Chungking and Moscow did not tend to soothe Japanese sensitiveness. Nor was the veil lifted upon the "twelve conferences in seven days" between Ambassador Grew and Foreign Minister Toyoda.

THE NEW JAPANESE CABINET

In mid-September the explosive character of the whole situation was further exemplified when the Emperor of Japan created the new defense headquarters under imperial command. This significant step was followed by the long-anticipated change of cabinet. Prince Konoye retired from his third term as Premier and was succeeded by General Hideki Tojo, former Minister of War. The change was variously interpreted, the Press asking dubiously: "What is it going to be, a way to peace or an approach to war?" The first act of the new Government was to request an extraordinary session of the Diet for Nov. 15, and it was on the same day

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that Secretary of the Navy Knox declared that a collision seemed inevitable. With two "immutable" policies face to face, the outlook was black. Yet hope died hard as talks continued between United States and Japanese representatives. The new Foreign Minister Togo, to all appearance, strove with might and main to work out a *modus vivendi*. Coincidentally, the Tokyo press put forth a joint program for the consideration of Washington. But as most of the items of this program cut squarely across the announced American terms, it produced no response.

THE MISSION OF KURUSU

One other element was at this time added to the situation through the sending to Washington of Saburo Kurusu as a special envoy. It was described as a "last effort to re-adjust Japanese-American relations." Coincidentally, President Roosevelt announced the withdrawal of the 970 American marines stationed at Shanghai, Peiping, and Tientsin, thus leaving the Settlements without foreign protection. Kurusu arrived at San Francisco Nov. 14, announcing cheerfully his hope that he might make "a touch-down." At Washington, after conferences with Ambassador Nomura, he held "exploratory" sessions with the President and Secretary Hull. Meanwhile, on the other side of the Pacific, the Diet listened to speeches by the Premier and the Foreign Minister. But, on neither side of the ocean, was any optimism expressed. Some believed that a moratorium on provocative oratory might have helped matters, but most were now convinced that even a limited settlement was beyond reach. The chances of war were, it was declared, nine-to-one and the United States must be "hard-boiled." In one quarter it was said, perhaps a little patronizingly: "If Japan renounces her plan to establish a great Far-Eastern Empire by military force, we will help them to find prosperity as a commercial power." Others said: "The Japanese are in a box; why let them out?"

The departure of the American ma-

lines from Shanghai on Nov. 20 was generally viewed as another step towards war, and on the following day Premier Tojo solemnly warned the Diet that hostilities were nearing. The inference was that the Washington negotiations had struck a snag, and the passing of a supplementary budget of 4,315,000,000 yen confirmed the impression.

FURTHER STEPS TOWARDS WAR

During the next days Secretary Hull spent more time with the BCD representatives than with the Japanese envoys. It was said that an "urgent" message from Tokyo reached them on Nov. 24 but its purport was undisclosed. As a final step the American terms were handed to Nomura and Kurusu on Nov. 25. It only remained for Japan to give her last reply. Some still professed to believe that concessions were possible, including a Japanese agreement to re-distribute the spheres of economic influence in China, to push no further south by military force, and to allow the Axis Pact to lapse.

But it now seems probable that the Japanese militarists had already concluded to go over the heads of the diplomats and stake all on the arbitrament of war; hence the massing of troops on the Thailand border and the practical ignoring of Secretary Hull's warning. The still more pointed protest of President Roosevelt on Dec. 2 was also ignored. Judging by what is now known, it is plain that plans for attack on the American bases had been already perfected to the last detail, though how far these plans had been revealed to the envoys is unrevealed. How they were kept secret from the American Pacific patrols is also a secret. That some lack of alertness existed is clear from Secretary of the Navy Knox's report to the President following his hurried visit to Honolulu, and from the more recent supersession of high army, navy and air officials in Hawaii.

OUTBREAK OF WAR

One immediate result of the Pearl Harbor attack, however, was to unify instantly the American nation in its

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resolve to fight the war to a victorious conclusion. The declaration of war against Japan was followed almost immediately by similar action against Germany and Italy. The whole nation was placed on a war footing, and American forces were not long in making touch with the enemy. The far-flung campaign, embracing vast areas of the Pacific and its adjacent coasts, is, of course, still in its early stages. The Cassandra-like wail of the pessimist is by no means as yet justified, but it can not be denied that so far the Japanese attack, carefully planned and cleverly executed, has had the advantage.

The surprise assaults on Pearl Harbor, the Philippines, and British pos-

sessions in the Far East have so far weakened the British and American fleets as to make possible the early Japanese gains. Hongkong surrendered on Christmas Day; large advances were recorded in Malaya, including the fall of Penang; raids were made on Borneo and Sumatra. American losses included the islands of Guam and Wake (after heroic resistance). But the most determined attack was made on the Philippines, and the large forces landed gained much territory on Luzon and Mindanao. The bombardment of Manila on Dec. 28, after the American army had declared it an "open city," was particularly destructive, and the city fell to the Japanese on Jan. 1, 1942.

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BRITISH PRESSURE IN ALLIED INTEREST

The major events of 1941 in the Near East can be explained fairly simply as an effort on the part of Great Britain to establish a solid anti-Nazi block from Egypt to India. At the close of 1940 the Near Eastern picture was none too bright from the British point of view. Syria was a political vacuum into which Nazi pressure might flow. The Germans had extended their solicitude also to the middle eastern states of Iraq, Iran, and Afghanistan. This whole area was extremely valuable to the British from the point of view of the oil and the strategic importance of the eastern Mediterranean area, Suez Canal, and the route to India. The year 1941 consisted to a large extent of bringing this whole area more or less under allied control.

Saudi Arabia played the part of an interested bystander and was the one country in the area to remain most unaffected. Afghanistan, early in August, felt some of the same pressure applied at that time by Britain and Russia to Iran. On Oct. 19 it was an-

nounced that Afghanistan had acceded to British wishes and was planning to expel the nationals of the Axis powers.

PALESTINE

Throughout the year Palestine remained a faithful ally of the British. There were several reasons for this. In the first place the Axis powers occasionally bombarded cities of Palestine as a part of their attack on Egypt. Second, Haj Amin el Husseini, the erstwhile Grand Mufti of Jerusalem, was no longer in the country and he proved to be a far less effective focus of discontent when not residing within Palestine. Finally, the Arabs and particularly the Jews were under no illusion as to whether the Nazis offered them a more rosy future than did the British. Their lack of love for the British had been evident for the last few years as had their mutual and reciprocal aversions, but as between Nazi or Fascist control on the one hand and British tutelage on the other there was practically no hesitation by the Palestinians in throwing their lot with the British.

As had been the case in earlier

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years one of the serious consequences of the war upon the country was the inability of the citrus fruit growers to market their crop. As in the defense of the country the Arabs and Jews were able to act together in facing this problem. In mid-January a joint Arab-Jewish delegation asked the government to buy the total crop and to cut foreclosures and taxation in an effort to save the industry for the country as a whole.

IRAQ

During the first half of April a *coup d'état* put the control of the government in the hands of Rashid Ali Beg el Gailani. In the past there had been other sudden changes in government from which the British, rather to their own surprise and that of the inhabitants, had largely stayed aloof. Such evidences of the growing pains of independence had been overlooked by Great Britain as long as no major change in Anglo-Iraqi relations seemed likely. The change in the spring of 1941, however, was precisely to re-orient the country away from Britain and toward the Axis. This, of course, Great Britain did not feel she could tolerate, particularly at a time when the Near Eastern area apparently was becoming more important as a possible future theatre of war.

Early in May the new government tried to block the passage of British troops through toward the oil-producing areas in the northern part of the country on the theory that this was an encroachment on the sovereignty of the country. At the same time Iraqi forces under the control of Rashid Ali seized the British Habbaniyah airport in the vicinity of Bagdad. The British pointed out at once, however, that the passage of troops and control of certain airports were specifically granted to them in the treaty of alliance between the two countries, and proceeded to enforce these rights by military force. The resisting Iraqi troops occupied a number of places of strategic importance throughout the country, and the British had some difficulty in dislodging them. The latter

slowly regained control, however, and by June 1 there was practically no resistance remaining in the country. During this upheaval Rashid Ali had requested Berlin for assistance which, fortunately for the British, was not forthcoming to any material extent.

SYRIA AND THE LEBANON

Since June of 1940 Syria had been an unknown quantity. Nominally under the control of Vichy, Syria failed to reflect a straight pro-Nazi attitude as might have been expected. At the same time that the British were settling the problem in Iraq, however, the Germans were pushing down through the Balkans and taking Crete. It was freely expected that the Nazis would, as soon as possible, make a bid for further expansion into the Near East by extending their control to Syria and the Lebanon. The undefined situation in this area, which had been tolerated by Britain for a year, could thus no longer be left in a position of uncertainty. The British accordingly thought it best to forestall a Nazi move eastward by occupying the French mandated territory themselves.

In early June there were rumors of British concentrations at the Syrian and Lebanese borders and reports that the British were about to move in. On June 4 they bombarded the port and oil storage facilities of the harbor at Beirut. Four days later the British and Free French crossed the border into Syria and the Lebanon, and the campaign for occupation was on. Columns entered the country both from Palestine and Transjordan on the south and from Iraq on the east. The more rapid progress was made by the eastern column but, in spite of greater resistance, contingents from Palestine, with a brief exception, pushed relentlessly forward. After some delay and a light aerial bombardment Damascus capitulated on June 21. From then on the troops pressed towards the important centers of Syria and the Lebanon and finally forced the French into a position where they had to surrender. The demands of the British were at first re-

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fused by Vichy, but the government there gave General Dentz the power to conclude an armistice which was initialed July 12.

According to the provisions of this document the territory was to become independent; amnesty was to be granted the French therein; war materiel, public works, and warships were to be turned over; French forces were to be permitted the choice of repatriation or joining the allies; Germans and Italians were to be interned; and British prisoners were to be set free. Syria did, in fact, declare its independence on Sept. 16 though the Allied occupation is expected to continue for the duration of the war.

After the armistice the British poured in a considerable number of troops and prepared for a real defense of the country. By this time Russia had been invaded, and the Germans were moving rapidly into Soviet territory. It seemed possible that the British might have to defend the oil fields of Iraq from a Nazi thrust through the Caucasus, and whether the German threat came from the west or from the north the British occupation of Syria added a second substantial stone to the British Near Eastern arch of resistance.

IRAN

After the British had assured themselves that Syria and Iraq could be depended on in an effort to resist possible encroachments of the Germans in the Near East, the British officials began to look with increasing suspicion towards Iran. In that country it appeared suddenly that there was an excessive number of Germans, particularly in the public services and in the oil business and points of strategic importance. Since early spring Foreign Secretary Anthony Eden had pointed out the danger in this situation, and by mid-summer the British were applying pressure on the Iranian Government to get some of these people out of the country. On Aug. 16 the British and Russians despatched a joint demand to the Iranian Government that the Germans be dismissed at

once. The Shah Riza Khan Pahlevi continued in his hope of playing off the two sides against each other and refused to comply with these demands.

On Aug. 25 the British from the south and the Russians from the northwest began the occupation of the strategic areas in the western part of the country. Two days later the cabinet resigned, and the following day, Aug. 28, a new cabinet took office which agreed to the demands and acquiesced in the occupation. The British and Russians continued to raise the price succeeding days and on Sept. 9 reached an agreement which was the basis of the new status of the country. By this, Axis legations were closed and Axis nationals were surrendered to the British and the Russians. The western area of the country was to continue under occupation as well as airports in the unoccupied section. Pressure on the Shah as a result of this occupation proved to be too much, and on Sept. 16 he abdicated in favor of his son, Shahpur Mohammed Riza. Many of the internal repressions of the preceding years broke out. Parliament demanded an increased voice in the policies of the country, and on Sept. 20 the new Shah issued a proclamation acquiescing not merely in the new international position of the country but in the new internal situation. On Sept. 21 a new cabinet was formed, and Iran had apparently taken its place in the British Near Eastern defense system.

TURKEY

Since the war started the Turks have spent the winter months of each year making extensive plans for defense in preparation for the war which might engulf them in the spring. The year 1941 was a part of this pattern. January was filled with greater defense expenditures, an increase of one year in the term of military service, and plans for the precautions to be taken in case of air raids. March brought spring manoeuvres, the calling of additional classes to the colors, and the institution of plans for civil-

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ian evacuation and blackout of Istanbul. Partial evacuation was in fact ordered with the Nazi drive into the Balkans in April, but the German military machine, though close by, did not direct its crushing attack toward Turkey.

With the German attack on Russia in June, Hitler's attention was diverted, if not from the Near Eastern oil fields, at least from the Turkish path in that direction. But with the German reversals in Russia and Libya late in the year, the Turks felt themselves again in danger from the Nazis.

In the meantime the Turks were under pressure from both Germany and Great Britain to throw their lot in each direction, respectively. The British did not despair when the Turks signed a ten-year pact of friendship with the Nazis on June 18; rather the British increased their efforts to provide arms for Turkey and to get the Turkish chrome. An agreement on chrome was reached in July which gave the British the total Turkish output until January 1943. It thus became impossible for the Germans to get any deliveries of this essential material, although in the trade negotiations of September, completed Oct. 9, Dr. Clodius, the German agent, did his best to cut into the British contract. Aside from the other provisions of the German agreement, the Turks appeared to win on the most essential matter—they were to receive arms prior to 1943 even without shipping any chrome until that time.

During the latter half of September the Turks were agitated by the crisis in Bulgarian relations. Germany was pressing the Bulgars to join actively

in the Russian campaign while the Russians were threatening them from the other side over a dispute regarding alleged Russian parachutists in Bulgarian territory. A little earlier Turkey had been pressed by the Axis to permit the passage of warships through the Straits but had refused, apparently even in case the ships had been transferred to the Bulgarian flag.

Late in October two Turkish generals were shown around the Nazi lines on the eastern front in an evident effort to impress them with the German successes up to that time. On Nov. 17 a Nazi press mission arrived in Turkey for the purpose of securing more German news in the Turkish newspapers. They were told, however, that this was a matter controlled by the various editors, not the government. In spite of plans to stay in Turkey for some time, the Germans found their task so difficult that they returned home in three days.

An indication of the attitude of the United States regarding the loyalty of Turkey to the anti-Axis bloc came on Dec. 3 when President Roosevelt formally extended the lease-lend provisions to Turkey by declaring that the defense of Turkey was vital to the defense of the United States. The Turks were pleased with this but probably not more than by the actual shipments of American supplies into the Near Eastern area. With the end of 1941 winter again returned to Turkey. This meant further preparations for a dangerous spring. And the Turks were of the opinion that, with the Nazi set-backs in Russia and North Africa, Turkey would almost certainly be drawn into the conflict in 1942.

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BY GRAHAM H. STUART
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GOOD NEIGHBOR POLICY AND CONTINENTAL DEFENSE

The year 1941 brought to fruition the seeds of more cordial relations

with Latin America sown in the previous years of the Franklin D. Roosevelt administrations. Hemisphere defense against the Axis Powers became

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a vital requirement for the safety of the two continents and several practical steps were taken to make it effective. In order that the Latin American republics might become better acquainted with what the United States was doing to defend the Americas, a tour of the chiefs of the Naval General Staffs of the American Republics was arranged and all of the principal Latin American republics participated. Starting their tour in Washington on May 7, the representatives of 11 Latin American states visited the naval establishments of the United States from coast to coast.

Military, naval, and aviation missions from the United States were made available to every Latin American republic which desired them. The aviation missions sent to Argentina and Peru in 1940 were maintained; the naval commission to Peru was augmented and a military adviser sent in March, 1941. A new arrangement was made with Brazil in January, 1941 for military and military aviation missions to be sent for a four-year appointment. A similar arrangement with Venezuela was made in March, 1941. Costa Rica arranged for a military mission of four officers on July 14, 1941. Bolivia for the first time in its history requested a mission from the United States, and in November, 1941 an American air mission supplanted the former Italian mission. By the autumn of 1941 arrangements had been made by the Interdepartmental Committee on Technical Aviation Training for the Citizens of the American Republics to train some 500 pilots, aeronautical engineers, and mechanics among applicants apportioned to the South American republics. At the close of the year some form of military, naval, or air mission was to be found in 13 of the 20 Latin American republics leaving out of consideration the huge forces at Panama and the naval base in Cuba. In South America proper only Uruguay and Paraguay were without such advisers.

SEIZURE OF FOREIGN SHIPS IN AMERICAN PORTS

At a meeting of the Inter-American Financial and Economic Advisory Commission, held in Washington on April 26, 1941, it was decided that the foreign flag ships held in American ports because of the war might be utilized by the American republics according to international law to promote the defense and security of the continent providing just and adequate compensation be made for such utilization. A plan for the effective use of these vessels was subsequently worked out and approved by all the American republics and adopted Aug. 28. On Nov. 14 the Commission passed a resolution recommending the formation of a specific commission to formulate plans for the efficient use of these merchant ships. The United States took over 31 Danish ships and 16 German and Italian vessels. Mexico, Uruguay, and Venezuela reported seizures; Peru and Ecuador told of burning or scuttling of German or Italian ships to prevent seizure. The ABC Powers preferred to come to a friendly agreement with the Axis Powers for the purchase of the idle merchantmen, and on Aug. 26 Argentina concluded negotiations for the purchase of 16 Italian vessels in Argentine ports.

THE BLACK LIST

Totalitarian activities in Latin American states caused the United States considerable uneasiness during the year. The German embassies, legations, and consulates were focal points of subversive activities, and reports from Mexico, Guatemala, Panama, Chile, Argentina, and Brazil finally aroused the United States to action. A presidential proclamation, issued July 17, authorized the promulgation of a list of persons and business institutions deemed to be acting in the interest of Germany or Italy and directed that no article covered by the Export Control Act of July 2, 1940 might be exported to persons named in the list except under special circumstances. The list, as originally promulgated, contained the names of

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1,800 persons and firms in the other American republics. Supplemental and revised lists were subsequently issued. When the Axis Powers tried to circumvent these restrictions by hiring Vichy French, Spanish, or Latin American agents to place orders for strategic raw materials in their own names, the United States compiled a grey list of suspects. In a third supplemental black list, issued Nov. 9, 519 additions and 59 deletions were made to previous lists. Justification of the United States action was amply shown by a report of the Coordination Office, headed by Nelson Rockefeller, which showed that certain United States business firms were employing anti-American commercial agents who used advertising appropriations to force newspapers and radios to follow anti-American policies, that many employees of United States firms were members of anti-American organizations, and that some of these firms turned over their confidential trade information to Germans who were distributing anti-American propaganda. Of some 5,000 firms in Latin America, over 1,000 were definitely known to be identified with anti-American activities.

On Jan. 14, 1942, Secretary of State Hull announced that the United States was extending its economic warfare to Europe and that Sweden, Turkey, Switzerland, Spain, and Portugal were involved in the black-listing of 1,800 Axis and non-Axis companies in those countries doing business with Germany, Italy, and Japan. This action of the State Department brought to nearly 5,000 the number of companies and individuals in Latin American and European countries with which persons in the United States may no longer engage in business or financial transactions. The new list followed that compiled by and adhered to closely by Great Britain, and, of course, it was regarded as a corollary to the war talks of the democratic Allies which can not in any sense be exclusive of economic warfare. The new list carries the names of companies and individ-

uals as follows: Portugal, 506; Portuguese possessions, 166; Spain, 369; Spanish possessions, 52; Sweden, 82; Turkey, 196; and Switzerland, more than 400.

LATIN AMERICA AND THE WAR

The treacherous attack by Japan upon Pearl Harbor and the subsequent declaration of war upon the United States by the Axis Powers brought the Latin American republics into immediate support of the United States. Nine Caribbean Republics: Cuba, Dominican Republic, Haiti, Panama, and the five Central American states, immediately issued declarations of war against Japan, Germany, and Italy. Mexico, although not declaring war, severed diplomatic relations with the Axis Powers and gave the United States, upon a basis of reciprocity, the privilege of permitting the passage of United States troops over her territory. Mexico already had, on April 1, signed a convention providing for reciprocal air base rights for the United States and Mexico which allowed the United States the privilege of utilizing Mexican airfields for fueling and repair purposes and to ferry long range bombers by short hops over Mexico rather than by the longer water route. Mexican planes might use United States airfields and bases upon the same conditions.

All of the South American states reaffirmed their Pan-American solidarity, and many of them took drastic action to prove it. Brazil froze Axis funds and clamped down upon Axis press and propaganda. Argentina agreed not to regard the United States as a belligerent, thus permitting the unlimited use of her port facilities. Chile took a similar stand and also took special measures to safeguard American properties. Uruguay, having taken the lead in proposing the policy of not regarding American states at war with non-American states as belligerents, indicated that she was virtually at war with the Axis powers. Colombia actually severed diplomatic relations with Japan.

THE UNITED STATES AND LATIN AMERICA

INTER-AMERICAN FOREIGN SECRETARIES CONFERENCE

To coordinate all American defense policies, Secretary of State Hull, at the instance of several Latin American states, particularly Chile, called the third consultative conference of American Foreign Ministers which met at Rio de Janeiro on Jan. 15, 1942. Secretary Hull was represented by Under Secretary Sumner Welles. The agenda covered both political and economic questions, with emphasis somewhat on the latter. Unified action in increasing the production and export of strategic materials, in providing shipping facilities, and in controlling alien financial and commercial facilities was to be sought. The agenda was necessarily vague regarding joint war efforts, but consideration was to be given to plans for the reconstruction of world order.

The conference remained in session until Jan. 28, 1942. Delegates of all 21 American republics signed on that day the final act embracing resolutions previously approved in committee for the severance of diplomatic, financial, and commercial relations with Germany, Italy, and Japan. Thus the Japanese attack on the United States and the ensuing declarations of war against this country by the three Axis Powers brought about the act of remarkable unity of purpose for the military and economic defense of the Western Hemisphere.

Much of the discussion turned on the wording of Article III of the agreement which was reached in principle concerning the breaking of relations with the Axis. After spirited debate, a new Article III was drafted which was acceptable to all and which met Argentina's objections to an immediate break and left to each nation to take its own action in its own way and at its own time. The revised Article III reads as follows: "The American republics, in accordance with the procedure established by their own laws and within the position and circumstances of each country in the actual continental conflict, recommend the rupture of their diplomatic relations with Japan, Ger-

many, and Italy, since the first of these States has attacked and the other two have declared war on an American country."

Before the Conference convened at Rio, only the United States, the Central American countries, and three Caribbean republics had made the break with the Axis. During the Conference six South American countries took that action which left only Argentina and Chile as still maintaining relations with Germany, Italy, and Japan. There was some reason to believe that both these countries would eventually follow the example of the others.

An issue of long-standing irritation was settled at Rio when the boundary dispute between Peru and Ecuador was by agreement put in the way of adjustment. It was announced that a commission would be appointed to work out a formula for establishing the new frontier between the Marañon and Potomayo rivers. This matter has been a bone of contention between the two countries for some 125 years.

UNITED STATES AND MEXICO OIL AGREEMENT

It was expected that President Avila Camacho would make a real effort to settle the one outstanding problem which clouded United States-Mexican relations, namely, the expropriation without adequate compensation of American owned oil wells, and hardly had he taken the oath of office before negotiations were begun. The oil companies were inclined to be recalcitrant, but Secretary Hull was determined to obtain a settlement if at all possible. On Nov. 19 announcement was made that a settlement covering oil properties, claims, trade, stabilization of currency, purchase of silver, and financing had been negotiated.

As regards the expropriation of petroleum properties, by an exchange of notes between the Mexican Government and the Department of State, provision was made for each of the two governments within 30

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days to appoint an expert to determine the just compensation to be paid American owners whose properties and rights had been affected to their detriment through acts of expropriation or otherwise on March 18, 1938 and subsequently, except those already arranged. Five months were allowed to fix the sum; if both agreed, it was settled; if no agreement was reached each expert would submit a separate report with a further period of 30 days for consideration. In case then no settlement was reached, the two governments agreed to seek by diplomatic means the amount of compensation. The Mexican Government agreed to make an immediate deposit of \$9,000,000 cash on account.

Mexico agreed to a full settlement of claims for property on the basis of the payment of \$40,000,000—\$3,000,000 down and \$2,500,000 annually, beginning in 1942. Both governments agreed to negotiate an acceptable trade agreement. The United States agreed to stabilize the peso in terms of the dollar by the purchase of pesos. The United States also promised to purchase newly mined silver on the same basis as previous to 1938, and the Export Import Bank would accept Mexican Government highway bonds as security for credit. Although the oil companies were not willing to accept the terms on the ground that it validated confiscation, it would appear as though they will have to agree when the definite settlement is obtained. From the standpoint of foreign policy, the agreement should be advantageous to both governments.

At the close of the year U. S. Ambassador Josephus Daniels, who had become very popular with the Mexican Government, asked to be relieved so that he might retire from public service. In his place, George Messersmith, an able career diplomat who had formerly been Assistant Secretary of State and was, when nominated, U. S. Ambassador to Cuba, was appointed to this very important post. Never before did prospects seem brighter for the two adjoining

countries to become friends as well as neighbors.

THE UNITED STATES AND PANAMA

In spite of the 1936 treaty with Panama, which many American naval officials thought was so generous that it threatened the safety of the canal, President Arnulfo Arias seemed strangely reluctant to cooperate with the United States Government for the greater protection of the Isthmus. The European war had aroused the United States to the point that construction was begun both on a new set of locks for the canal and a strategic highway across the Isthmus. An agreement in principle for the development of airfields and further defence facilities was reached with difficulty, and still further delays occurred in making it effective.

When, in October, the United States was moving towards the arming of her merchant ships, President Arias announced that Panama would not permit its merchant ships to be armed. Since about 125 American-owned merchant ships were sailing under Panamanian registry, this was a serious set-back to the United States. Apparently the decree was not popular in Panama because, on Oct. 9, while President Arias was in Havana for eye treatment, U. S. Ambassador Wilson was notified that President Arias had been suspended for leaving the country without permission and that a new government had been formed. The new government, with President Ricardo Adolfo de la Guardia at its head, immediately declared that it favored collaboration in defense of the continent and would respect its contractual obligations with the Government of the United States.

One of the first acts of the new government was to revoke the resolution forbidding the arming of foreign-owned vessels flying the Panamanian flag. The new decree, issued Oct. 20, authorized "the owners of ships flying the Panamanian flag to provide at their expense the arms necessary for their legitimate defense

THE UNITED STATES AND LATIN AMERICA

against attacks which constitute violation of freedom of the seas and of international law."

TRADE AGREEMENT WITH ARGENTINA

One of the principal causes of friction between the United States and Argentina has been the tariff policy of the United States. The Hawley-Smoot Tariff Act of 1930 not only raised drastically the duties on many Argentine products, including flaxseed and canned meats, but it extended the embargo on the imports of fresh meats from areas directly infested by the hoof and mouth disease to countries where the disease was known to exist. This extension prevented the importation of mutton from Patagonia where the disease had never existed. A sanitary convention, negotiated in 1935 to remedy this situation, was supported by the Roosevelt Administration, but the Senate refused to approve its ratification. An attempt to lower tariff barriers by a trade agreement in 1939 was frustrated by the power of the farm bloc.

The war in Europe imposed a serious curtailment of Argentine markets and sources of supply, and Argentina was compelled to turn to the United States. As a result, a huge export balance in favor of the United States by the end of 1940 forced Argentina to restrict her purchases from the United States by exchange allotments. Fortunately in 1941 the United States defense program increased overwhelmingly the purchase of Argentine products such as wool, hides, skins and quebracho, and as a result the balance of trade turned quickly and substantially in favor of Argentina. In the first 10 months of 1941, the value of Argentine export trade to the United States increased from \$62,189,827 to \$141,189,827, a jump of about 125 per cent.

Such circumstances were very favorable to the negotiation of a trade

agreement. The intention was announced May 12, 1941, and the agreement was formally signed in Buenos Aires, Oct. 14 to become effective Nov. 15. At first sight it would seem as though Argentina got much the better of the bargain. The United States grants a 50% reduction in tariff on such important Argentine exports as flaxseed, canned meats, cattle hides, quebracho extract, and casein. These articles cover more than 75 per cent of Argentine exports to the United States. On the other hand, the reduction of Argentine rates are for the most part considerably less than 50%, and they cover less than 20% of United States exports to Argentina. Nevertheless, the abnormal situation brought about by the war has produced such an acute shortage of shipping that trade is more dependent upon priorities than upon tariff easements. The value of the agreement is that it indicates a real effort towards economic cooperation, and it will tend to develop permanent markets for an increasing number of products in the future.

INTER-AMERICAN COFFEE MARKETING AGREEMENT

Another important economic arrangement looking towards continental solidarity was the Coffee Marketing Agreement signed Nov. 28, 1940 and ratified Feb. 12, 1941. By the terms of this agreement, 14 American republics "allocate equitably the market of the United States and that of the rest of the world among the various coffee producing countries through the adoption of basic annual export quotas for each country." According to these quotas, the United States will take 9,300,000 bags of coffee from Brazil, 3,150,000 bags from Colombia, 1,550,000 bags from the Central American republics, and the remainder of our 15,545,000 bags from the various other coffee-growing republics.

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FOREIGN SERVICE OF THE UNITED STATES

By MONNETT B. DAVIS

CHIEF, FOREIGN SERVICE ADMINISTRATION, DEPARTMENT OF STATE

ADMINISTRATIVE REGULATIONS

The administrative regulations issued in pursuance of the Foreign Service Act of February 23, 1931, as amended, are to be found in Executive Order No. 8696 of April 18, 1940. These regulations implement the Act by providing, among other things, for a Board of Foreign Service Personnel, a Board of Examiners and a Board of Foreign Service Officers' Training School.

BOARD OF FOREIGN SERVICE PERSONNEL

The duties of this Board are to examine into the character, ability, efficiency, experience, and general availability of all members of the Foreign Service with a view to promotions, transfers, and separations; to consider controversies or delinquencies among the Service personnel, and to recommend for promotion to the grade of minister those officers who have shown special capacity. The Board is composed of not more than three Assistant Secretaries of State, an officer of the Department of Commerce, and an officer of the Department of Agriculture. One of the Assistant Secretaries of State is the Assistant Secretary who has supervision over the Division of Foreign Service Personnel and is chairman of the Board. The members of the Departments of Commerce and Agriculture sit only when nominations and assignments of Commercial and Agricultural Attachés, the selection or assignment of Foreign Service officers for specialized training in commercial or agricultural work, or matters of interest to those Departments, are under consideration. The Chief of the Division of Foreign Service Personnel and one other member of the Division may attend the meetings of the Board, but are not entitled to vote in its proceedings.

BOARD OF EXAMINERS

The duties of the Board are to hold examinations of applicants for admission to the Foreign Service. The examinations, both written and oral, are open only to Americans of good standing between the ages of 21 and 35, specially designated by the President for examination, who have been citizens of the United States for at least 15 years, who are physically, mentally, and temperamentally qualified for the proper performance of the duties of the Foreign Service, and who are not married to aliens. American clerks who have rendered satisfactory service in the Foreign Service for a period of five years immediately preceding the submission of their application for appointment as a Foreign Service officer may be exempted by the Board from written examinations and may be granted certain exceptions concerning age limitations. The Board is composed of three Assistant Secretaries of State, an officer of the Department of Commerce, an officer of the Department of Agriculture, the Chief of the Division of Foreign Service Personnel of the Department of State, and the Chief Examiner of the Civil Service Commission.

FOREIGN SERVICE OFFICERS' TRAINING SCHOOL

The school is maintained in the Department of State for the instruction of new appointees to the Foreign Service, and is under the direction of the Board of Foreign Service Officers' Training School. The duties of the Board are to act in all matters concerning the functions of the school, with the approval of the Secretary of State; to select the director of the School from among the officers of the Foreign Service with the approval of the Secretary of State, and in its discretion to select other in-

FOREIGN SERVICE OF THE UNITED STATES

structors from among the qualified officers of the Department of State, the Foreign Service, the executive departments of the Government, and other available sources. The Board is composed of the members of the Board of Foreign Service Personnel, the Chief of the Division of Foreign Service Personnel, and the Director of the School.

FOREIGN SERVICE EXAMINATION

During 1941 one examination was held for appointment to the American Foreign Service. Four hundred and twenty-eight persons presented themselves for the written examination which was held Sept. 8-11, and those who were successful in passing this written examination presented themselves for the oral examination in January, 1942.

CHANGES IN DIPLOMATIC AND CONSULAR PERSONNEL

In June and July 1941, at the instance of the German and Italian Governments, the Government of the United States withdrew its consular representation from Germany and Italy. American diplomatic and consular offices were at the same time closed in other European countries under German or Italian control. The offices closed were: Bremen, Cologne, Dresden, Frankfurt - on - the - Main, Hamburg, Koenigsberg, Leipzig, Munich, Stuttgart, Vienna, Florence, Genoa, Milan, Trieste, Turin, Venice, Paris, Bordeaux and Biarritz in occupied France, Amsterdam, Rotterdam, Luxembourg, Brussels, Antwerp, Athens and Salonika in Greece, Oslo and Bergen in Norway, and Belgrade and Zagreb in Yugoslavia.

The United States Army Transport *West Point* (formerly the *SS America*), which had been sent from New York City to Lisbon to carry German and Italian consular officers to Europe, returned to New York on Aug. 1, 1941 with officers and employees of the United States from the above-mentioned posts.

Upon the outbreak of war between Japan and the United States the establishments of this government were closed at the following places: American Embassy at Tokyo, all consular offices in the Japanese Empire, American Embassy offices at Peiping and Nanking, and all consular offices in Japanese-occupied China, including Manchuria. The American Legation at Bangkok, Thailand and American consular offices at Hong Kong, Saigon (French Indo-China), Penang (Straits Settlements), and Manila were closed upon the occupation of these places by the Japanese forces.

After declarations of war by Ger-

CLASSIFICATION, FOREIGN SERVICE, 1941

	Salary	Number
Head of Missions		
Ambassadors.....	\$17,500	19
Ministers.....	10,000	25
Ministers.....	9,000	2
Minister Resident and Consul General (Baghdad).....	FSO*	1
American Commissioner to India.....	FSO*	1
		48
Foreign Service Officers		
Class 1.....	\$9,000-\$10,000	41
Class 2.....	8,000- 9,000	40
Class 3.....	7,000- 7,900	63
Class 4.....	6,000- 6,900	84
Class 5.....	5,000- 5,900	88
Class 6.....	4,500- 4,900	100
Class 7.....	4,000- 4,400	141
Class 8.....	3,500- 3,900	96
Unclassified (A)...	\$3,400	2
Unclassified (A)...	3,200	2
Unclassified (A)...	3,100	2
Unclassified (A)...	3,000	74
Unclassified (B)...	2,750	53
Unclassified (C)...	2,500	71
		857
Clerks—Senior		
Class 1.....	\$4,000	6
Class 2.....	3,750	4
Class 3.....	3,500	15
Class 4.....	3,250	43
Class 5.....	3,000	46
Clerks—Junior		
Class 1.....	2,750	77
Class 2.....	2,500	94
Class 3..All under	2,500	686
		971

* Foreign Service Officer.

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many and Italy on the United States, this government closed its embassies at Berlin and Rome. The legations at Budapest, Bucharest, Copenhagen, and Sofia were closed late in December 1941.

During 1941 there were four deaths in the Foreign Service. There were also six resignations. At present (January, 1942) the Service comprises 885 career officers.

PROMOTIONS FROM THE RANKS

Of a total of 19 ambassadors and 27 ministers, 10 of the former and 18 of the latter have previously served in the ranks of the Foreign Service or of the Department of State. In addition, the Minister Resident and Consul General at Baghdad, Iraq and the American Commissioner to India at New Delhi, India are Foreign Service Officers.

DIPLOMATIC PERSONNEL

AMBASSADORS

	Accredited by United States		Accredited to United States	
Argentina.....	Norman Armour	1939	Señor Don Felipe A. Espil	1931
Belgium.....	Anthony J. Drexel Biddle, Jr. ¹	1941	Count Robert van der Straten-Ponthoz	1935
Bolivia.....	Pierre De L. Boal	1942	Señor Dr. Don Luis Fernando Guachalla	1936
Brazil.....	Jefferson Caffery	1937	Mr. Carlos Martins	1939
Chile.....	Claude G. Bowers	1939	Señor Don Rodolfo Michels	1941
China.....	Clarence E. Gauss	1941	Dr. Hu Shih	1938
Colombia.....	Arthur Bliss Lane	1942	Señor Dr. Gabriel Turbay	1939
Cuba.....	Spruille Braden	1940	Señor Dr. Aurelio F. Conchoso	1941
Ecuador.....	Boaz Long	1942	Señor Capitán Colón Eloy Alfaro	1933
France.....	William D. Leahy	1940	Mr. Gaston Henry-Haye	1940
Great Britain...	John G. Winant	1941	The Right Honorable the Viscount Halifax, K.G.	1941
Mexico.....	George S. Messersmith	—	Señor Dr. Don Francisco Castillo Nájera	1935
Panama.....	Edwin C. Wilson	1941	Señor Don Ernesto Jaén Guardia	1941
Paraguay.....	Wesley Frost	1941	Señor Dr. Don Juan José Soler	1940
Peru.....	R. Henry Norweb	1940	Señor Don Manuel de Freyre y Santander	1930
Poland.....	Anthony J. Drexel Biddle, Jr.	1937	Mr. Jan Ciechanowski	1941
Spain.....	Alexander W. Weddell	1939	Señor Don Juan Francisco de Cárdenas	1939
Turkey.....	John Van A. MacMurray	1936	Mr. Mehmet Munir Ertegun	1934
Union of Soviet-Socialist Republics.....	Laurence A. Steinhardt	1939	Mr. Maxim Litvinov	1941
Uruguay.....	William Dawson	1941	Dr. Juan Carlos Blanco	1941
Venezuela.....	Frank P. Corrigan	1939	Señor Dr. Don Diógenes Escalante	1939

¹ Accredited also to the Governments of Poland, Norway, The Netherlands, Czechoslovakia, Yugoslavia and Greece, established in England.

MINISTERS

	Accredited by United States		Accredited to United States	
Afghanistan....	Louis G. Dreyfus ¹	1940		
Australia.....	Nelson T. Johnson	1941	The Right Honorable Richard G. Casey	1940
Canada.....	Jay Pierrepont Moffat ²	1940	Mr. Leighton McCarthy	1941
Costa Rica.....	Robert M. Scotten	1942	Señor Don Luis Fernández	1940
Czechoslovakia	Anthony J. Drexel Biddle, Jr. ¹	1941	Mr. Vladimír Hurban	1936
Denmark.....	Ray Atherton ⁴	1939	Mr. Henrik de Kauffmann	1939
Dominican Republic.....	Avra M. Warren	1942	Señor Dr. J. M. Troncoso	1941

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	Accredited by United States		Accredited to United States	
Egypt.....	Alexander C. Kirk ⁵	1941	Mahmoud Hassan Bey	1938
El Salvador....	Robert Frazer	1937	Señor Dr. Don Hector David Castro	1934
Estonia ⁶	—	—	Mr. Johannes Kaiv, Acting Consul General of Estonia in New York City, in charge of Legation	1939
Finland.....	H. F. Arthur Schoenfeld	1937	Mr. Hjalmar J. Procopé	1939
Greece.....	Anthony J. Drexel Biddle, Jr. ³	1941	Mr. Cimon P. Diamantopoulos	1940
Guatemala.....	Fay A. Des Portes	1936	Señor Dr. Don Adrian Recinos	1928
Haiti.....	John Campbell White	1940	Mr. Fernand Dennis	1941
Honduras.....	John D. Erwin	1937	Señor Dr. Don Julian R. Caceres	1939
Iceland.....	Lincoln MacVeagh	1941	Mr. Thor Thors	1941
India.....	Thomas M. Wilson (Commissioner)	1941	—	—
Iran.....	Louis G. Dreyfus, Jr.	1939	Mr. Mohammed Schayesteh	1940
Iraq.....	Paul Knabenshue (Minister Resident and Consul General)	1932	—	—
Ireland.....	David Gray	1940	Mr. Robert Brennan	1938
Latvia ⁶	—	—	Dr. Alfred Bilmanis	1935
Liberia.....	Lester A. Walton	1935	—	—
Lithuania ⁶	—	—	Mr. Povilas Zadeikis	1935
Luxembourg....	Jay Pierrepont Moffat ⁷	1941	Mr. Hugues Le Gallais	1940
Netherlands....	Anthony J. Drexel Biddle, Jr. ³	1941	Dr. A. Loudon	1938
Nicaragua.....	James B. Stewart	1942	Señor Dr. Don León De Bayle	1937
Norway.....	Anthony J. Drexel Biddle, Jr. ³	1941	Mr. Wilhelm Munthe de Morgenstierne	1934
Portugal.....	Bert Fish	1941	Dr. João Antonia de Bianchi	1933
Saudi Arabia....	Alexander C. Kirk ⁵	1941	—	—
Sweden.....	Herschel V. Johnson	1941	Mr. W. Bostrom	1926
Switzerland....	Leland Harrison	1937	Mr. Charles Bruggmann	1939
Thailand.....	Willys R. Peck	1941	Mom Rajawongse Seni Pramoj	1940
Union of South Africa.....	Leo J. Kenna	1937	Mr. Ralph William Close	1934
Yugoslavia.....	Anthony J. Drexel Biddle, Jr. ³	1941	Mr. Constantin Fotitch	1935

¹ Accredited also to Iran; resident in Tehran.

² Accredited also to Government of Luxembourg, established in Canada.

³ Accredited also to Governments of Poland, Norway, The Netherlands, Czechoslovakia, Yugoslavia and Greece, established in England.

⁴ Now in United States on consultation.

⁵ Accredited also to Saudi Arabia; resident at Cairo.

⁶ Closed.

⁷ Accredited also to Canada.

⁸ Accredited also to Egypt.

THE LEAGUE OF NATIONS AND PERMANENT COURT OF INTERNATIONAL JUSTICE

BY ARTHUR SWEETSER

DIRECTOR, SECRETARIAT OF THE LEAGUE OF NATIONS

GENERAL

A re-assessment of America's place and responsibility in world affairs and a re-reading of a quarter century's history such as has seldom occurred in American life took place under the hammer-blows of 1941 as the United

States progressed from an uneasy neutrality at the start of the year to a dangerous belligerency at its close. The relationship existing between the United States and the three major international agencies which grew out of the first World War, the League

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of Nations, Permanent Court of International Justice, and International Labor Organization changed profoundly as the second World War approached and finally engulfed the country. Barriers both of distance and of viewpoint were reduced from both sides, for, on the one hand, much of the remaining activities of those agencies were transferred to North America, and, on the other, the American people were more and more asking if they had been right in 1919 in not entering fully into the common efforts for peace, justice, and social security which they themselves had largely brought into being.

LEAGUE WORK IN THE AMERICAS

The Removal.—The first of these two steps towards bridging the gulf opened up by the 1919 Senate treaty fight came with the transfer to North America of much of the work of the League which still remained possible in the turmoil of war. While Geneva remained the headquarters, with some four-score international officials gallantly carrying on various technical, administrative, and other activities, meetings there were no longer practicable, and much work had to be done elsewhere. Thus, the International Labor Office moved almost completely to Montreal, with its Conference held in New York and Washington; the League's Economic, Financial, and Transit Department was largely in Princeton, the anti-drug agencies in Washington, and an intellectual cooperation meeting in Havana.

Supervisory Commission.—Most significant was the fact that the Supervisory Commission, which had been given almost complete powers during the emergency, not only held its first session outside Europe, in Montreal during July, but also reconstituted itself largely of members available on the American side of the Atlantic. Its chairman, Carl J. Hambro of Norway, had become a resident of Princeton; two new members stationed in Washington, Ambassador Najera of Mexico and Hume

Wrong of Canada, were added; and a third, H. S. Malik, Indian Trade Commissioner in New York, was coopted. This, with the membership of Costa du Rels of Bolivia and the availability of Sir Cecil Kisch or Sir Frederick Phillips for Great Britain, gave the Commission a strong Atlantic flavor, all the more as the members from France and Finland were unable to attend and those from Holland and Belgium could not even be communicated with.

The July session, meeting in the midst of war and for the first time on belligerent soil, took the occasion, after making the necessary administrative and budgetary decisions, to issue a general appeal to states members. "It is of the greatest importance for the future," it said, "to keep up the framework of the League and not lose the accumulated experience of more than 20 years of international cooperation and administration . . . The League . . . represents the idea of free and friendly cooperation between nations for the better ordering of international life; it expresses, in its three main institutions, the aspirations towards peace, social justice, and the observance of international law; it continues in most difficult conditions work of great value to mankind. The Commission, therefore, urges States members to accept willingly the not very serious sacrifices which may be necessary to keep these ideals alive during the period of the war and to prepare for the better organization of international life thereafter."¹

Economic, Financial, and Transit Department.—Meanwhile the two technical agencies, given hospitality in the United States, fully resumed during 1941 the work interrupted by the transfer from Geneva the previous year. The Economic, Financial, and Transit Department, which had been most happily headquartered at the Institute for Advanced Study in Princeton, was engaged, as expressed by Director A. Loveday, in seeking

¹ First Report of the Supervisory Commission for the Year 1941, League Document, C53, M50, October 15, 1941.

"to trace the major changes that were taking place in the economic structure of the world and to consider in advance some of the innumerable economic problems which will arise if the world is to have any chance of permanent peace," including especially an understanding of past mistakes, greater assurance of economic security, prevention of economic depressions, study of population pressures, and above all, analysis of the deep-lying changes taking place during the course of the war, as illustrated in the issuance of the 'World Economic Survey'² during the year. As the Acting Secretary-General expressed it in his annual report: "New and valuable contacts have been established, old contacts renewed, and, at a time when it is impossible to hold committee meetings in Europe and the great majority of delegates have left Geneva, these contacts have proved of vital importance."³

Opium Board and Drug Body.—Similarly, the Branch Offices of the Permanent Central Opium Board and the Drug Supervisory Body, opened in Washington in 1940 with the consent of the United States Government, continued their work in cooperation with headquarters at Geneva and with especial contact with the Americas. Thus this work, far from being discontinued under the impact of war, was stated by Herbert L. May, member of both parent bodies, to be "surviving in a disintegrating world and successfully resisting the forces which have disrupted much other international cooperation" (Special Supplement, *Changing World*, January, 1942), largely, he thought, because of its vital necessity, its soundness of organization, and its association with a permanent agency like the League. The Central Board continued to receive quarterly and annual drug statistics from the great majority of governments, and the Supervisory Body issued its regular State-

ment of World Requirements on which both drug manufacture and trade control are based.

National Committees on Intellectual Cooperation.—Another activity of interest during the year was a meeting of the National Committees on Intellectual Cooperation formed in nearly all countries of the Americas to cooperate with the League's work in this field. While the parent international body could not meet in Geneva and the Institute was under military occupation in Paris, representatives of nearly a score of countries came together in Havana in December, including a large and widely represented delegation from the United States. The meeting proved deeply actuated by the necessity of universal cooperation in this field and in the meantime took steps to continue what work is still possible in the Americas and protect it from a threatened infiltration and perversion from hostile sources. It afforded another evidence of the vitality of League work, even when the initiating committee is temporarily unable to function.

Grants for League Work.—American interest in activities such as these took material form as well, as shown in the Supervisory Commission's chapter on "Miscellaneous Grants for League Work in the United States of America" (First Report, Supervisory Commission). Thus, the Rockefeller Foundation made a grant of \$50,000 towards the work at Princeton, while the Institute for Advanced Study, Princeton University, and the Milbank Fund gave other assistance, without which, as the Secretary-General's Report states, "the Department would have found great difficulty in carrying out a considerable part of its program." The Carnegie Corporation made a grant of \$25,000 towards certain studies of the International Labor Office and \$2,000 towards the exceptional expenses involved in the transfer of part of the anti-drug work, while the Carnegie Endowment for International Peace voted \$5,000 to make possible the issuance of certain publications of the Permanent Court.

² "World Economic Survey, 1939-41." League of Nations Documents.

³ "Brief Statement on the Activities of the League of Nations and its Organs in 1940 and 1941," League Document C41, M38, Geneva, June 1941.

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This last was the only indication of interest or support of the Court apart from the continued service of Manley O. Hudson as one of the Court's judges. This agency of international law and justice, representing American policy running back nearly two generations and urged for American membership by every President and Secretary of State since its inception, would have died completely during the year if not supported by the other nations.

AMERICAN REACTION TO THE LEAGUE

Far more important, however, than these valiant but necessarily secondary struggles against great odds was the startlingly rapid evolution during 1941 of American opinion regarding the necessity both of international organization and of American participation in it. During the twelvemonth, as America traversed the critical road from neutrality to beligerency, her policy and viewpoint on these matters evolved in exact reflexion of the more dangerous developments. Hesitant and muffled at the outset, it rapidly warmed as the crisis deepened, till it reached the high spot at the year's end of Prime Minister Churchill's address to Congress.

Two themes seemed to dominate; first, that the United States had its own share of responsibility for the present world cataclysm, and, second, that it must not follow the same policy next time. The most explicit statement yet made by a high government official on the first point was that of Under-Secretary of State Sumner Welles, who on Armistice Day, before the tomb of Woodrow Wilson, said: "The heart-searching question which every American citizen must ask himself on this day of commemoration is whether the world in which we have to live would have come to this desperate pass had the United States been willing in those years which followed 1919 to play its full part in striving to bring about a new world order based on justice and

on 'a steadfast concert for peace.' Would the burdens and dangers which the American people might have had to envisage through that 'partnership of democratic nations,' which Woodrow Wilson then urged upon them, have represented even an infinitesimal portion of the burdens and the dangers with which they are now confronted?" Or, in the words of Supreme Court Justice Jackson: "The tragedy and irony of our present position is that we who would make no commitment to support world peace are making contributions a thousandfold greater to support a world war; we who would not agree to even economic sanctions are now imposing those very sanctions against half the world in an effort to turn the fortunes of war."

But most dramatically of all, Congress cheered loudly, and a chorus of editorial approval warmly approved Prime Minister Churchill's bold statement in the memorable session of the two bodies on Dec. 27: "If we had kept together after the last war, if we had taken common measures for our safety, this renewal of the curse need never have fallen upon us."

The shift in opinion intensified throughout the year as the crisis deepened. A slow and gradual change seemed to arise from deep down in the American consciousness which was first widely remarked in a Gallup poll on June 8. This showed that, whereas in 1937, 67% of those polled had been against the United States joining an agency such as the League, the proportion had since shifted to a slight majority in favor. Dr. Gallup commented: "Unnoticed and unheralded by even the shrewdest political observers over the past months, public opinion has undergone a marked reversal on the question of American membership in a league of nations."

Great accentuation was given to this spontaneous and almost undirected shift of opinion by the promulgation of the Atlantic Charter in August. The last of its eight points provided for disarmament of the defeated powers "pending the establishment of a wider and permanent system of general se-

THE INTERNATIONAL LABOR ORGANIZATION

curity." Thus something on the line of an organized association of nations seemed clearly to be in the minds of President Roosevelt and Prime Minister Churchill, even before the United States itself entered the war. Under-Secretary of State Sumner Welles went even further when, in analyzing the difficulties the League of Nations had faced, he said: "I cannot believe that peoples of goodwill will not once more strive to realize the great ideal of an association of nations through which the freedom, the happiness, and the security of all peoples may be achieved."

Meanwhile, even in the midst of war, the search for positive means to implement this determination was under way. Almost every agency of the government spoke in terms of post-war as well as war planning. Vice President Wallace described the Economic Defense Board as seeking in part "to build a world in which our human and material resources are

used to the utmost." Secretary of Agriculture Wickard announced the accumulation of vast stores of foodstuffs and other reconstruction materials. Secretary of Labor Perkins put forward suggestions for the use of the International Labor Office in post-war work. Secretary of the Navy Knox foresaw the possibility of a long peace guaranteed by the British and American Navies. Other departments offered their particular contributions.

Thus, as war broke on the United States for the second time in a generation, American opinion was travelling back over the remnants of the now silent isolationists to the sense of world responsibility and organization which had inspired it a quarter of a century ago, and making ready to implement, perhaps by certain parts of the international cooperative effort established in the first World War and already functioning within or close to the United States, the ideal of an ordered world society committed to destroying the scourge of war.

THE INTERNATIONAL LABOR ORGANIZATION

By ETHEL M. JOHNSON

DIRECTOR, INTERNATIONAL LABOR OFFICE, WASHINGTON BRANCH

INTER-AMERICAN COMMITTEES

Close cooperation between the International Labor Organization and the Americas has been made possible by the establishment of the "Working Center" of the International Labor Office in the Western Hemisphere. One of the results of this cooperation is seen in the Inter-American committees dealing with labor problems and labor relations which are operating under the auspices of the International Labor Office. The Inter-American Committee to Forward Social Security Among the Americas, which was started in December of 1940 at Lima, Peru through joint action of the International Labor Organization and official representatives of ten American Republics, has continued its work in 1941 in cooperation with the

Social Insurance Section of the International Labor Office. The Committee has been expanded by the addition of Canada which has agreed to nominate a member. The Chilean Government has invited the Committee to meet in Santiago de Chile in the early part of 1942.

NATIONAL DEFENSE PROBLEMS

The approach of the war to this hemisphere has given impetus to Inter-American studies dealing with the labor problems involved in national defense. Under the auspices of the International Labor Office, a Canadian-United States tri-partite committee was set up to study the problem of regulation of labor supply in a period of war emergency. The Committee met several times during

II. INTERNATIONAL AFFAIRS AFFECTING THE UNITED STATES

1941, some of the sessions being held in Canada, others in the United States, in cooperation with officials of the International Labor Office. A by-product of these meetings has been the demonstration of the effectiveness of the tri-partite system upon which the International Labor Organization is based. Out of the meetings has come the publication of the report prepared by the International Labor Office for the use of the Committee on "Labor Supply and National Defense."

INTERNATIONAL LABOR OFFICE PERSONNEL

Although the world situation has forced severe economies on the International Labor Organization and drastic reductions in its staff, the Office has proceeded with its work. There has been a slight increase in personnel during 1941 due in part to temporary appointments. At the close of 1941 there were about 75 members at the Working Center in Montreal. A small staff is still retained at the headquarters in Geneva, which has facilitated contact with European countries and supplied documentation. The London Office and the Washington Office, for England and the United States respectively, have been expanded by additions from the staff in Geneva. New correspondents have been appointed in several South American states and several members of the Head Office have been assigned to work in their respective countries and supply information and documentation to the Office.

RESEARCH AND PUBLICATIONS

From its new Working Center in Montreal, the International Labor Office has continued its research and publications including the *International Labor Review*, the *Legislative Series* and the *Studies and Reports Series*. The impact of the world crisis is reflected in the emphasis placed in the publications on war-time labor problems and problems of post-war social economic reconstruction. In addition to its regular publications, the Office issued in 1941 a comprehensive

"International Labor Code" which comprises an analytical compilation of the labor treaties adopted from the inception of the International Labor Organization through 1939—the most recent year in which conventions and recommendations have been considered.

INTER-AMERICAN COLLABORATION ON SOCIAL PROBLEMS

The location of the Working Center has facilitated technical assistance by the International Labor Office to member countries in the Americas. The assistant director of the Office, who was formerly chief of the Social Insurance Section, advised the Mexican Government with regard to the introduction of a social insurance system in that country, and made an inquiry into industrial and agrarian labor problems in Mexico. The Chief of the Social Insurance Section of the Office has visited most of the South American countries to give advice and assistance in connection with their social insurance questions and in connection with the work of the Committee to Forward Social Security. Other officials of the Office have visited the principal South American countries and consulted with competent officials there with reference to labor legislation, labor law administration, and labor statistics. At the request of the Canadian Government an official from the staff has been assigned to the Canadian Ministry of Labour to assist in the development of unemployment compensation legislation. An expert on housing from the Office staff was loaned to the United States Government in connection with the Defense Housing Program. North America, as well as Mexico and South America, has thus taken advantage of the opportunity for international collaboration afforded through the agency of the International Labor Office.

REPRESENTATION ON THE GOVERNING BODY

Close ties between the International Labor Organization and the Americas is evidenced by representation on the

THE INTERNATIONAL LABOR ORGANIZATION

Governing Body. Carter Goodrich of Columbia University is chairman of the Governing Body. Two other citizens of the United States—Henry I. Harriman, former President of the United States Chamber of Commerce and Robert J. Watt, international representative of the American Federation of Labor—represent employers and workers respectively on that Body. Dr. Bryce M. Stewart, Deputy Minister of Labor of Canada represents that country on the Governing Body of the International Labor Office. The Governments of Brazil, Chile, and Mexico are also represented on the Governing Body, the two last mentioned by Cabinet Ministers. Until Feb. 15, 1941 John G. Winant, a citizen of the United States, served as Director of the International Labor Office. On that date, Mr. Winant resigned to accept appointment by President Roosevelt as United States Ambassador to Great Britain. In his new position he has helped to cement the support of both countries to the ILO. Edward J. Phelan, deputy director of the International Labor Office, succeeded Mr. Winant as acting director. Mr. Phelan has been connected with the International Labor Organization since its inception, having collaborated with the Labor Commission at the Peace Conference when the constitution of the International Labor Organization was adopted.

MEETINGS

In the early part of 1941, members of the Governing Body were consulted by correspondence, by cable, and, where possible, by interview with regard to the advisability of organizing meetings. Based on the results of these consultations, arrangements were made to hold a session of the Governing Body and an International Labor Conference in the United States in 1941. On the invitation of Columbia University, the Governing Body sessions and the sittings of the Conference were held at the University. The Governing Body met Oct. 25 and at various times during the Conference which opened on Oct. 27

in New York City and closed in Washington on Nov. 6, the closing session on the invitation of President Roosevelt being held at the White House.

In view of the world situation and the fact that not all of the member countries could be represented, no action was taken at the Governing Body meeting with regard to election of officials. Instead Carter Goodrich was continued as chairman of the Governing Body and Edward J. Phelan as acting director of the International Labor Office. Mr. Phelan was, however, invested with the full authority and prerogatives of director and granted the emergency powers conferred on the director by the Governing Body during the world crisis. As director of the International Labor Office, Mr. Phelan served as Secretary-General of the Conference.

INTERNATIONAL LABOR CONFERENCE

Also due to the world situation, the Conference held an extraordinary rather than a regular session. It was the first general Conference since 1939, the session scheduled for 1940 in Geneva having been cancelled on account of the war. The Conference met to consult on policy and procedure during the existing crisis and in the period of post-war reconstruction and to discuss the problem of securing effective cooperation during the war and after between the representatives of government, management, and workers. These subjects were presented in reports prepared for the Conference—that of the Acting Director on "The ILO and Reconstruction," and the Office reports on "Methods of Collaboration" and "Wartime Developments in Government-Employer-Worker Collaboration."

In spite of the war, 35 countries participated in the Conference, 33 through delegates, two through observers. Approximately two-thirds of the 54 countries that are members of the International Labor Organization took part. The countries represented included practically all of the Americas; the British Empire and its self-

II. INTERNATIONAL AFFAIRS AFFECTING THE UNITED STATES

governing dominions; the European Governments-in-exile; India; Egypt; Iran; Thailand; and China. Ireland and France sent delegates. Free France sent an un-official observer.

The importance of the Conference was recognized in the strength of the delegations sent. The United States designated as its government representatives, the Secretary of Labor and an Assistant Secretary of State. The British Delegation was headed by the Deputy Prime Minister of Great Britain. Some 15 ministers of cabinet rank from a dozen different countries attended the Conference. The President of the United States invited the Conference to the White House and addressed the closing session.

STATEMENTS OF POLICY AND OF PLANS

Resolutions adopted at the Conference stated the policy of the International Labor Organization in the present world conflict between dictatorships and democracies and outlined a program of present and future work for the Organization. The resolutions called for the establishment by the International Labor Organization of a world textile office to consider the economic and social problems of that industry; they gave endorsement to the Atlantic Charter and pledged the full cooperation of the International Labor Office in its implementation; authorized the director of the International Labor Office to cooperate in post-war plans for improving social-economic conditions for seamen; confirmed the principle of tri-partite collaboration both during the conduct of the war and in the problems of economic and social reconstruction in the post-war period; recommended agrarian reforms and improvements of living standards in countries that have made inadequate provision for the protection of workers; and urged that all free peoples "contribute to the uttermost limit of their power for the victory of China, Great Britain and their allies by supplying all the arms

that their industries can produce." One of the resolutions, known as "The American Resolution" because it was prepared and presented by the delegates from the United States, declared that a "victory of the free peoples in the war against totalitarian aggression is an indispensable condition to the attainment of the ideals of the International Labor Organization." It outlined the economic measures that should be taken at the close of the war and requested the cooperation of the International Labor Organization and its existing agencies in this work. This resolution further asked that the International Labor Organization be represented in any peace or reconstruction conference following the present war.

CONVENTION RATIFICATIONS

Although the World War has necessarily retarded the work, the progress of ratification of ILO conventions has continued. Up to Dec. 1, two conventions have been ratified in 1941. The countries taking this action were Mexico, which ratified the convention concerning safety provisions in the building industry, and Iraq, which ratified the 1934 convention on workmen's compensation for occupational diseases. Switzerland, through order of the Federal Council of April 9, 1941, applied to the crews of Swiss ships six of the maritime conventions adopted by the International Labor Conference. Member countries have also continued to submit reports to the Office on the application of the conventions which they have ratified.

Another development during the year which should receive notice is the action of the Canadian Government in defining the status of the Office. On Aug. 14, 1941, the Canadian Parliament adopted an Order in Council giving diplomatic status to the International Labor Office and diplomatic privileges to members of the Office who are engaged in official business.

WAR CHRONOLOGY OF 1941

WAR CHRONOLOGY OF 1941

(From *The New York Times*)

JANUARY

- 5—British Imperial troops capture Bardia, Libyan port, and trap 25,000 Italians.
- 6—President Roosevelt, in special message to Congress, calls for all-out aid to the democracies; defines four freedoms as basis for post-war peace.
- 8—Washington announces establishment of three fleets in United States Navy—Atlantic, Pacific and Asiatic; Admiral Husband E. Kimmel appointed Commander in Chief.
President Roosevelt submits \$17,485,000,000 budget to United States Congress; \$10,811,000,000 for defense.
- 10—Lease-Lend Bill introduced in United States Congress.
- 20—British Imperial Army invades Eritrea.
President Roosevelt inaugurated for third term.
- 21—Anti-Nazi rebellion breaks out in Rumania; it is subsequently crushed with much bloodshed.
- 22—British Imperials seize Tobruk. Allis-Chalmers strike, first of many severe stoppages in American defense industries, begins.
- 30—Adolf Hitler warns that his submarines will sink any ships carrying aid to Britain.
British capture Derna in Libya.

FEBRUARY

- 6—John G. Winant named American envoy to London.
- 7—British take Bengazi in Libya.
- 8—United States House of Representatives passes Lease-Lend Bill, 260-165.
- 9—Admiral Darlan becomes Vice Premier and Foreign Minister in the Vichy Government.
- 10—Great Britain breaks off relations with Rumania.
- 24—Foreign Minister Matsuoka of Japan says his nation is entitled to all of "Oceania."

- 26—Strike at Bethlehem Steel Company plants menaces the progress of the American preparedness program.

MARCH

- 1—Nazi troops enter Bulgaria as Sofia signs the Axis Pact.
- 2—Vichy Government gives in to Japanese demands for concessions to Thailand.
- 8—Senate passes Lease-Lend Bill after long debate, 60-31.
- 11—Lease-Lend Bill becomes law.
- 19—National Defense Mediation Board established to cope with American defense strike problem.
- 24—Soviet Russia and Turkey sign a pact of neutrality.
- 25—Yugoslav Government signs Axis Pact.
- 25—Foreign Minister Matsuoka arrives in Berlin for a visit.
- 27—Army coup in Yugoslavia overthrows government and sets up anti-Axis regime. British Imperial Army captures Cheren, Eritrean stronghold. President Roosevelt signs measure appropriating \$7,000,000,000 for lease-lend aid.
- 28—British Mediterranean Fleet defeats Italian Fleet off Cape Matapan, Greece.
- 30—United States seizes Axis shipping in American ports.

APRIL

- 3—Hungarian Premier Teleki is a suicide. British evacuate Bengazi, as Germans begin advance in Libya.
- 6—German armies invade Yugoslavia and Greece. Belgrade signs non-aggression pact with Moscow. British imperials capture Addis Ababa, Ethiopia's capital.
- 8—Germans reach the Aegean Sea, threatening Greek-Yugoslav communications.
- 9—Germans take Salonika, strategic Greek port on the Aegean.

II. INTERNATIONAL AFFAIRS AFFECTING THE UNITED STATES

- 10—United States takes Greenland under protection; signs agreement with Danish Minister in Washington.
- 12—Soviet Russia warns Hungary on fighting against Yugoslavia.
- 13—Moscow signs neutrality treaty with Japan. German units push into Egypt; Tobruk siege begins.
- 16—First heavy air raid of year on London.
- 23—King George II of Greece flees to Crete as Germans continue advance.
- 26—British begin to evacuate troops from Greece.
- 27—German Army enters Athens.
- 30—President Roosevelt announces United States Navy will patrol sea in defense zones.

MAY

- 1—Prime Minister Churchill announces that 48,000 British troops escaped from the battle of Greece.
- 2—Iraqi troops attack British who landed to protect oil port of Basra.
- 6—Josef Stalin becomes Premier of Soviet Russia.
- 10—Rudolf Hess flies mysteriously to Scotland; becomes British prisoner. British Government announces that 488,124 tons of Allied shipping were lost in April, the second highest figure of the war.
- 15—United States takes French ships into custody.
- 18—Italians surrender in Ethiopia.
- 21—German glider troops begin invasion of Crete. United States freighter *Robin Moor* sunk in South Atlantic by Nazi submarine; all saved.
- 23—President Roosevelt sets up Office of Civilian Defense.
- 24—Nazi battleship *Bismarck* sinks H. M. S. *Hood* in Atlantic.
- 27—British naval units, aided by American-built patrol bomber, sink *Bismarck*. President Roosevelt proclaims an unlimited national emergency.
- 31—Iraqis bow to British. Dublin bombed; Irish protest to Berlin.

JUNE

- 1—British yield Crete, evacuate 15,000.
- 2—Hitler and Mussolini hold a parley at Brenner Pass.
- 4—Kaiser Wilhelm II dies in exile at Doorn in the Netherlands.
- 8—British and Free French enter Syria, after accusing Vichy regime of allowing Nazis to use Syrian air bases.
- 9—Army opens struck North American aviation plant at Inglewood, Calif.
- 14—President Roosevelt orders freezing of all Axis assets in the United States.
- 16—United States orders all Nazi consulates closed. British open abortive offensive in Libya.
- 18—Turkey and Germany sign an amity pact.
- 19—Axis countries expel United States Consulate staffs.
- 22—German armies invade Soviet Russia on a 2,000-mile front from the Arctic to the Black Sea.
- 24—President Roosevelt announces all possible aid for Soviet Russia.

JULY

- 1—750,000 young Americans who have reached 21 register for Selective Service. British General Wavell's command is shifted from the Near East to India.
- 3—Premier Stalin, in radio address, challenges Nazi invincibility, asks Russian people to follow "scorched earth" policy.
- 7—United States occupies Iceland.
- 11—United States blacklists Axis firms in Latin America.
- 13—Great Britain and Soviet Russia sign mutual-aid agreement.
- 14—French sign armistice ending the fighting in Syria.
- 19—Great Britain launches V-for-Victory propaganda war on Continent.
- 23—Vichy Government accepts Japanese occupation of Indo-China.
- 25—United States and Britain freeze Japanese assets.
- 30—Soviet Russia and Polish Govern-

WAR CHRONOLOGY OF 1941

ment in Exile sign agreement of mutual aid. President Roosevelt asks United States Congress for legislation to control prices and prevent wartime inflation.

AUGUST

- 1—President Roosevelt bans aviation fuel to Japan.
- 3—7 P. M. curfew on gasoline sales begins in Eastern United States.
- 6—United States and Great Britain warn Japan to keep hands off Thailand.
- 12—Premier Pétain commits France to policy of collaboration.
- 14—President Roosevelt and Prime Minister Churchill issue eight-point statement of peace aims drawn up at their secret meeting on the Atlantic.
- 15—Premier Stalin accepts Roosevelt-Churchill message asking a Soviet-aid parley in Moscow.
- 18—United States announces plane ferry service to Near East. President Roosevelt signs bill extending Army service by two and one-half years.
- 21—German troops and French police take drastic step to check outbreak of violence in occupied France.
- 23—United States Navy takes over Federal Shipbuilding and Drydock Company at Kearny, N. J., to end strike.
- 28—Iran agrees to cooperate with Britain and Soviet Russia after their troops invade Iran territory. Japanese Ambassador sees President Roosevelt with note from Premier Konoye; wide talk in view. President Roosevelt sets up Supply Priorities and Allocations Board with broad powers to supervise defense.
- 29—Hitler and Mussolini end five-day meeting on Russian front.

SEPTEMBER

- 4—United States destroyer Greer attacked by submarines; torpedoes miss.
- 11—President Roosevelt orders Navy to shoot first in Atlantic.

- 16—United States Navy begins protecting all shipments as far as Iceland.
- 20—Germans enter Kiev, third largest Soviet city. President Roosevelt signs record revenue measure, providing for \$3,553,400,000 to cover wartime expenditures.
- 29—Three-power Soviet-aid meeting opens in Moscow.

OCTOBER

- 2—Nazis begin all-out drive to take Moscow before Winter.
- 3—Hitler, in address to Germans, declares Russia "broken."
- 9—Panama coup puts pro-United States President in office.
- 14—Nazi armies are reported within sixty miles of Moscow.
- 17—Konoye Cabinet falls in Tokyo. Odessa falls to Axis troops after long siege. Diplomatic corps and part of government quit Moscow for temporary capital at Kuibyshev, 500 miles inland on the Volga. United States destroyer *Kearny* torpedoed off Iceland, reaches port with ten dead.
- 18—Hideki Tojo, Axis friend, forms Cabinet in Japan.
- 21—Fifty Frenchmen slain by Nazis in reprisal for assassination of German officer in Nantes.
- 23—British M. Ps. urge setting up of a second front to aid Soviet Russia. Gasoline restrictions in Eastern United States are withdrawn as threat of shortage passes.
- 25—Kharkov, important industrial town in Donets Basin, falls to Nazis.
- 26—Captive coal-mine strike begins; John L. Lewis defies President Roosevelt.
- 27—President Roosevelt tells nation shooting has started.
- 31—United States Army takes over Air Associates plant in Bendix, N. J. American destroyer *Reuben James* torpedoed and sunk in Atlantic.

NOVEMBER

- 2—United States Coast Guard placed under Navy orders.

II. INTERNATIONAL AFFAIRS AFFECTING THE UNITED STATES

- 3—United States demands Finns end war against Soviet Russia.
- 5—Japanese special envoy, Saburo Kuruu, starts for the United States with "last proposals."
- 6—Washington extends \$1,000,000,000 lease-lend aid to Soviet Russia. Maxim Litvinoff appointed Russian Ambassador to the United States.
- 10—Prime Minister Churchill promises to join the United States in an hour if it becomes involved in a war with Japan. National Defense Mediation Board rules against John L. Lewis in captive coal-mine dispute.
- 14—Aircraft Carrier *Ark Royal* is sunk by Axis submarines in the Mediterranean.
- 17—Amendments to United States Neutrality Act permitting arming of ships and ending restricted zones becomes law.
- 19—British Imperial Army begins offensive in Libya.
- 20—General Weygand yields command of French African armies.
- 22—German troops capture Rostov, key to Caucasus. John L. Lewis accepts arbitration in coal mine strike.
- 24—United States occupies Dutch Guiana to protect aluminum sources and forestall possible Axis coup.
- 25—Nineteen nations sign renewed anti-Comintern Pact.
- 29—Russians recapture Rostov, begin offensive in Ukraine. Japan's Premier Tojo asks purging of United States and British influence in Orient.

DECEMBER

- 2—President Roosevelt asks Japan's aims in Indo-China. British fleet, led by the new battleship *Prince of Wales*, steams into Singapore.
- 6—President Roosevelt appeals to Emperor Hirohito for peace.
- 7—"The Day of Infamy." Japan makes surprise attack on Hawaii, the Philippines, United States island possessions, Malaya and Hong Kong.
- 8—Congress declares state of war with Japan.
- 9—British battleships *Prince of Wales* and *Repulse* are sunk by Japanese planes off Malaya. President Roosevelt in fireside chat asks United States to prepare for long, world-wide war.
- 11—Germany and Italy declare war on United States.
- 15—United States Congress passes \$10,077,077,005 appropriation measure for armed forces and lease-lend.
- 16—Hawaii command shaken up; Admiral Kimmel relieved of command.
- 19—Congress passes bill to extend draft to those from 20 to 44.
- 22—Winston Churchill begins war talks in Washington with President Roosevelt.
- 23—Free French forces seize St. Pierre and Miquelon, Vichy island possessions off North America.
- 24—American Wake Island garrison surrenders to Japanese.
- 25—Hong Kong falls to Japanese.
- 26—British shift Far Eastern command—Sir Henry Pownall succeeds Sir Robert Brooke-Popham.
- 27—Manila, declared an "open city," bombed severely by Japanese.

PERIODICAL PUBLICATIONS

American Journal of International Law
700 Jackson Place N.W., Washington, D.C.

Current History and Forum
366 Madison Ave., New York City.

Events
1133 Broadway, New York City.

Foreign Affairs
45 East 65th Street, New York City.

Foreign Policy Bulletin
22 East 38th Street, New York City.

Foreign Policy Reports
22 East 38th Street, New York City.

COGNATE SOCIETIES AND RESEARCH INSTITUTIONS

Living Age
420 Madison Ave., New York City.
Pacific Affairs
129 East 52nd Street, New York City.
Pan-American Union Bulletin
Pan-American Union, Washington, D.C.

Time Weekly Newsmagazine (The)
9 Rockefeller Plaza, New York City.
World Affairs
734 Jackson Place, Washington, D.C.

COGNATE SOCIETIES AND RESEARCH INSTITUTIONS

(For further information, the reader may address the following organizations)

GENERAL

ACADEMY OF POLITICAL SCIENCE, Fayerweather Hall, Columbia University, New York City.
AMERICAN ACADEMY OF POLITICAL AND SOCIAL SCIENCE, 3457 Walnut St., Philadelphia, Pa.
AMERICAN ARBITRATION ASSOCIATION, 8 West 40th St., New York City.
AMERICAN PEACE SOCIETY, 734 Jackson Place, Washington, D.C.
AMERICAN POLITICAL SCIENCE ASSOCIATION, 305 Harris Hall, Northwestern University, Evanston, Ill.
AMERICAN SOCIETY OF INTERNATIONAL LAW, 700 Jackson Place, N.W., Washington, D.C.
CARNEGIE ENDOWMENT FOR INTERNATIONAL PEACE, 700 Jackson Place, N.W., Washington, D.C.
COUNCIL OF FOREIGN RELATIONS, INC., 45 East 65th Street, New York City.
FOREIGN POLICY ASSN., 22 East 38th Street, New York City.
INTERNATIONAL REFORM FEDERATION, 134 B St., N.E., Washington, D.C.
LEAGUE OF NATIONS ASSN., 8 West 40th St., New York City.
NATIONAL COUNCIL FOR PREVENTION OF WAR, 532 17th St., N.W., Washington, D.C.
PEOPLE'S LOBBY, INC., 404 Burchell Bldg., Washington, D.C.

WOMEN'S INTERNATIONAL LEAGUE FOR PEACE AND FREEDOM, 20 Vesey Street, New York City.
WOMEN'S PEACE UNION, 2 Stone St., New York City.
WORLD PEACE FOUNDATION, 40 Mount Vernon St., Boston, Mass.

REGIONAL

AMERICAN ASIATIC ASSN., 1 Hanover Square, New York City.
CHINA SOCIETY OF AMERICA, 570 Lexington Ave., New York City.
COMMITTEE ON COOPERATION IN LATIN AMERICA, 156 Fifth Ave., New York City.
ENGLISH-SPEAKING UNION OF THE UNITED STATES, 30 Rockefeller Plaza, New York City.
FAR EAST CONFERENCE, 11 Broadway, New York City.
FRENCH INSTITUTE IN THE UNITED STATES, 22 East 60th St., New York City.
JAPAN SOCIETY, INC., 527 Fifth Ave., New York City.
NETHERLAND-AMERICA FOUNDATION INC., 10 Rockefeller Plaza, New York City.
PAN-AMERICA SOCIETY, INC., 67 Broad St., New York City.
PAN-PACIFIC UNION, INC., 1025 Alakea St., Honolulu, Hawaii.

PART TWO

AMERICAN GOVERNMENT

DIVISION III

THE NATIONAL GOVERNMENT

FEDERAL ADMINISTRATIVE ORGANIZATION

BY WILLIAM M. SCHUYLER
EDITOR, *The American Year Book*

THE PRESIDENT AND VICE-PRESIDENT

President.—Franklin Delano Roosevelt, of New York (Democrat). Sworn into office as President of the United States, March 4, 1933, in succession to Herbert Hoover, and inaugurated for third term Jan. 20, 1941.

Vice President.—Henry Agard Wallace of Iowa (Democrat), inaugurated Vice President of the United States Jan. 20, 1941.

Executive Office of the President.—

White House Office—Marvin Hunter McIntyre (Kentucky), Stephen Early (Virginia), Brigadier General Edwin Martin Watson (Alabama), Secretaries; Marguerite A. Le Hand, Personal Secretary to the President.
Special Assistant to the President.—Harry L. Hopkins.
Bureau of the Budget—Harold D. Smith, Director.
Council of National Defense, United States—Secretary of War, Chairman.
Office for Emergency Management—Wayne Coy, Liaison Officer.
Office of Civilian Defense—James M. Landis, Executive Director.
Defense Communications Board—James Lawrence, Chairman.
Office of Facts and Figures—Archibald MacLeish, Director.
Office of Defense Health and Wel-

fare Services—Paul V. McNutt, Director.
Division of Defense Housing Coordination—Charles F. Palmer, Coordinator.
Office of Coordinator of Inter-American Affairs—Nelson A. Rockefeller, Coordinator.
Office of Lend-Lease Administration—E. R. Glettinius, Jr.—Administrator.
Office of Price Administration—Leon Henderson, Administrator.
Office of Production Management—William S. Knudsen, Director General.
Supply Priorities and Allocations Board—Henry A. Wallace, Chairman.
National Resources Planning Board—Frederic A. Delano, Chairman.
Office of Government Reports—Lowell Mellett, Director.
Transportation Division—Ralph Budd, Commissioner.
Coordinator of Information—William J. Donovan.
Economic Defense Board—Milo Perkins, Executive Director.
Office of Scientific Work and Development—Dr. Vannevar Bush, Director.
National Defense Mediation Board—William H. Davis, chairman.
Liaison Office for Personnel Management—William H. McReynolds, Liaison Officer.
Presidential Vacancy.—By Act of

FEDERAL ADMINISTRATIVE ORGANIZATION

Congress, in the case of vacancy occurring in the office of President through the death or removal of both the President and Vice President, the Cabinet Officers succeed to the Presidency in the order indicated in the arrangement of the following summary of the executive departments:

DEPARTMENT OF STATE

Secretary of State.—Cordell Hull.
Under Secretary of State.—Sumner Welles.

Assistant Secretaries of State.—Adolf A. Berle, Jr., Breckinridge Long, Dean G. Acheson, G. Howland Shaw.

Foreign Service Personnel Board.—G. Howland Shaw, Chairman.

Legal Adviser.—Green H. Hackworth.

Economic Adviser.—Herbert Feis.

Advisers on Political Relations.—James C. Dunn, Stanley K. Hornbeck, Laurence Duggan.

Director of Personnel.—Edward Yardley.

Assistant to the Secretary of State.—Cecil W. Gray.

Chiefs of Divisions.—

Far Eastern Affairs.—Maxwell M. Hamilton.

American Republics.—Philip W. Bonsal (Acting).

European Affairs.—Ray Atherton (Acting).

Near Eastern Affairs.—Wallace Murray.

Passport.—Ruth B. Shipley.

Current Information.—Michael J. McDermott.

Foreign Service Administration.—Monnett B. Davis, Chief.

Foreign Service Personnel.—John G. Erhardt, Chief.

Protocol.—George T. Summerlin.

Foreign Activity Correlation.—George A. Gordon, Acting Chief.

International Communications.—Thomas Burke.

Foreign Funds Control.—Donald Hiss, Chief.

International Conferences.—Warren H. Kelchner.

Treaty.—Charles M. Barnes.

Research and Publication.—E. Wilder Spaulding.

Commercial Affairs.—Raymond H. Geist, Chief.

Studies and Statistics.—Lynn R. Edminster, Acting Chief.

Commercial Policy and Agreements.—Harry C. Hawkins.

Defense Materials.—Thomas K. Finletter, Acting Chief.

Exports and Defense Aid.—Charles Bunn, Acting Chief.

Visa.—Avra M. Warren.

Communications and Records.—David A. Salmon.

World Trade Intelligence.—John S. Dickey, Acting Chief.

Cultural Relations.—Charles A. Thomson.

Financial.—Frederick Livesey, Chief.

Accounts.—Donald W. Corrick.

Special.—Joseph C. Green, Chief.

Special Research.—Leo Pasvolksy, Chief.

Chiefs of Offices.—

Central Translating.—Guillermo A. Suro, Chief.

Editor of Treaties.—Hunter Miller.

Co-ordination and Review.—Blanche Rule Halla.

Fiscal and Budget Affairs.—Ella A. Logsdon.

Foreign Service Buildings.—Frederick Larkin.

Foreign Service Officers' Training School.—William C. Burdett, Director.

Caribbean.—Coert duBois, Chief.

Philippine Affairs.—John K. Davis.

Committee for Reciprocity Information.—Oscar B. Ryder, Chairman.

National Munitions Control Board.—Secretary of State, Chairman.

DEPARTMENT OF THE TREASURY

Secretary of the Treasury.—Henry Morgenthau, Jr.

Charged with the management of the national finances; prepares plans for the improvement of the revenue and support of the public credit; superintends collection of the moneys paid from and into the Treasury; controls construction of public buildings, coinage and printing of money, and the administration of the Coast

III. THE NATIONAL GOVERNMENT

Guard and the Public Health Service; *ex-officio* chairman of the Federal Reserve Board.

Under Secretary of the Treasury.—Daniel W. Bell.

Assistant Secretary.—John L. Sul-livan.

Assistant Secretary in Charge of Customs, Narcotics, and Secret Service.—Herbert E. Gaston.

Director of Personnel.—E. R. Bal-linger.

Special Assistants to the Secre-tary.—Harold N. Graves, Harry D. White, John W. Pehle, Ferdinand Kuhn, Jr., James L. Houghteling, B. M. Edwards, Chester I. Barnard, Dave H. Morris, Jr.

Administrative Assistant to the Secretary.—W. N. Thompson.

Technical Assistant to the Secre-tary.—H. Merle Cochrane.

Chief Clerk.—F. A. Birgfeld.

Commissioner of the Public Debt Service.—William S. Broughton.

Commissioner of Accounts.—E. F. Bartelt.

General Counsel.—Edward H. Foley, Jr.

Chiefs of Divisions.—

Savings Bonds—Eugene W. Sloan.
Correspondence—Gabrielle E. For-bush.

Monetary Research—Harry D. White.

Tax Research—Roy Blough.

Research and Statistics—George C. Haas.

Secret Service—Frank J. Wilson.

Procurement—Clifton E. Mack.

Chief Disbursing Officer—Guy F. Allen.

Comptroller of the Currency.—Preston Delano.

Has supervision of the national banks, their examination and reports; preparation and issue of national bank circulation; redemption and destruc-tion of national bank notes. *Ex-officio* member, Federal Reserve Board.

Treasurer of the United States.—William A. Julian.

Charged with the receipts and dis-bursement of all public moneys de-positied in the Treasury and Sub-Treasuries and in national banks de-positories.

Commissioner of the Bureau of Customs.—W. R. Johnson.

Commissioner of the Bureau of In-ternal Revenue.—Guy T. Helvering.

Charged with general supervision of the collection of all internal revenue taxes, including the income tax, and the enforcement of internal revenue laws.

Director of the Bureau of the Mint.—Nellie Tayloe Ross.

Has general supervision of the mints and assay offices.

Commissioner of Narcotics.—H. J. Anslinger.

Director of the Bureau of Engrav-ing and Printing.—Alvin W. Hall.

Produces all the securities and sim-ilar work of the Government printed from steel plates.

Custom House.—Franklin A. M. Shafer, Deputy Collector in Charge.

Committee on Practice.—G. C. Hanna, Chairman.

Processing Tax Board of Review.—William Schwartz, Chairman.

DEPARTMENT OF WAR

Secretary of War.—Henry L. Stim-son.

Under Secretary of War.—Robert P. Patterson.

Assistant Secretary of War.—John J. McCloy.

Assistant Secretary of War for Air.—Robert A. Lovett.

Administrative Assistant and Chief Clerk.—John W. Martyn.

Special Assistants to the Secretary of War.—Julius H. Amberg and Harry H. Bundy.

Clerk to the Secretary of War.—John W. Schott.

War Department General Staff.—General George C. Marshall, Chief of Staff; Major General William Bryden, Deputy Chief of Staff.

Office of the Chief of Cavalry.—Major General John K. Herr, Chief.

Chief of Field Artillery.—Major General Robert M. Danford.

Chief of Coast Artillery.—Major General Joseph A. Green.

Chief of Infantry.—Major General Courtney H. Hodges.

Chief of Chaplains.—William R. Arnold.

FEDERAL ADMINISTRATIVE ORGANIZATION

The Adjutant General.—Major General Emory S. Adams.

The Inspector General.—Major General Virgil L. Peterson.

The Judge Advocate General.—Major General Myron C. Cramer.

The Quartermaster General.—Major General Edmund B. Gregory.

Chief of Finance.—Major General H. K. Loughry.

Surgeon General.—Major General James C. Magee.

Chief of Engineers.—Major General Eugene Reybold.

Chief of Ordnance.—Major General C. M. Wesson.

Chief Signal Officer.—Major General Dawson Olmstead.

Chief of the Army Air Forces.—Major General H. H. Arnold.

Chief of the Air Corps.—Major General George H. Brett.

Director of Aircraft Production.—Colonel Bennett E. Meyers.

Chief of the National Guard Bureau.—Major General John F. Williams.

Chief of the Chemical Warfare Service.—Major General William N. Porter.

Provost Marshal General.—Major General Allen W. Gullion.

The Army War College.—Lieut. Colonel Ernest A. Williams, Acting Commandant.

The Army Industrial College.—Colonel Frank Whitehead, Director.

DEPARTMENT OF JUSTICE

Attorney General.—Francis Biddle. Represents the United States in all legal matters.

Solicitor General.—Charles Fahy.

Assistant to the Attorney General.—James H. Rowe.

Assistant Attorneys General.—Thurman W. Arnold, Samuel O. Clark, Francis M. Shea, Norman M. Littell, Wendell Berge.

Assistant Attorney General, Division of Customs.—Paul P. Rao.

Immigration and Naturalization Service.—Lemuel B. Schofield, in charge.

Director of the Bureau of Investigation.—J. Edgar Hoover.

Director of the Bureau of Prisons.—James V. Bennett.

Director of the Bureau of War Risk Litigation.—Julius C. Martin.

Federal Prison Industries, Inc.—Sanford Bates, President.

Executive Assistant to the Attorney General.—Ugo Carusi.

Administrative Assistant.—Thomas D. Quinn.

General Agent.—E. R. Butts.

Chief Clerk.—Harvey C. Donaldson.

Appointment Clerk.—Nellie G. Plumley.

Chief of the Division of Records.—Armando di Girolamo.

Chief of the Division of Supplies and Printing.—John W. Adler.

Director of Information.—Robert M. Gates.

Librarian.—Matthew A. McKavitt.

Pardon Attorney.—Daniel M. Lyons.

Board of Parole.—Arthur D. Wood, T. Webber Wilson, Edward P. Reidy.

POST OFFICE DEPARTMENT

Postmaster General.—Frank C. Walker.

Executive Assistant to the Postmaster General.—William F. Cronin.

Special Assistant to the Postmaster General.—William J. Bray.

Administrative Assistant to the Postmaster General.—William C. Lyons.

First Assistant Postmaster General.—Ambrose O'Connell.

Second Assistant Postmaster General.—Smith W. Purdum.

Third Assistant Postmaster General.—Ramsey S. Black.

Fourth Assistant Postmaster General.—Walter Myers.

Comptroller and Budget Officer.—William L. Slattery.

Director of Parcel Post.—John A. Brennan.

Solicitor.—Vincent M. Miles.

Chief Post Office Inspector.—Kildroy P. Aldrich.

Superintendent of Air Mail Service.—Roy M. Martin.

DEPARTMENT OF THE NAVY

Secretary of the Navy.—Frank Knox.

III. THE NATIONAL GOVERNMENT

Under Secretary of the Navy.—James V. Forrestal.

Assistant Secretary of the Navy.—Ralph A. Bard.

Assistant Secretary of the Navy for Air.—Artemus L. Gates.

Chief Clerk.—William D. Bergman.

Chief of Division of Records.—Charles M. Baruch.

Budget Officer.—Rear Admiral Ezra G. Allen.

Director of Shore Establishments.

—Rear Admiral C. W. Fisher.

Island Governments.—Capt. Roscoe E. Schuirmann.

Guam.—Capt. George J. McMillin, Governor.

American Samoa.—Captain Lawrence Wild, Governor.

Chief of Naval Operations.—Admiral Harold R. Stark.

Coast Guard.—Rear Admiral Russell R. Waesche, Commandant.

Chief of the Bureau of Navigation.—Rear Admiral Randall Jacobs.

Chief of the Bureau of Yards and Docks.—Rear Admiral Ben Moreell.

Chief of the Bureau of Ordnance.—Rear Admiral W. H. P. Blandy.

Chief of the Bureau of Ships.—Rear Admiral Samuel M. Robinson.

Chief of the Bureau of Supplies and Accounts.—Rear Admiral Ray Spear.

Chief of the Bureau of Medicine and Surgery.—Rear Admiral Ross T. McIntire, Surgeon General.

Chief of the Bureau of Aeronautics.—Rear Admiral John H. Towers.

Judge Advocate General.—Rear Admiral W. B. Woodson.

Naval Consulting Board.—Thomas Robins, Secretary.

Compensation Board.—Rear Admiral Julius A. Furer, Senior Member.

General Board.—Rear Admiral W. R. Sexton, Chairman.

Interior Control Board.—Captain W. A. Lee, Senior Member.

President of the Board of Medical Examiners.—Rear Admiral Benjamin H. Dorsey.

President of the Naval Examining Board.—Rear Admiral Andrew C. Pickens.

Naval Retiring Board.—Rear Admiral Benjamin H. Dorsey.

Naval Dispensary.—Captain Richard A. Warner, Medical Corps.

Naval Yard and Station, Washington, D.C.—Rear Admiral George Pettengill, Commandant.

Naval Research Laboratory.—Rear Admiral Harold G. Bowen, Director.

Naval Air Station.—Commander Edward P. Moore.

Naval Medical Center.—Rear Admiral Charles M. Oman, commanding officer.

Naval Medical School.—Captain C. W. O. Bunker.

Naval Hospital.—Captain Robert E. Hoyt.

President of the Board for Examination of Medical Officers.—Captain C. W. O. Bunker.

President of the Board of Examination of Dental Officers.—Captain C. W. O. Bunker.

Headquarters Marine Corps.—Major General Thomas Holcomb, Commandant.

Naval Examining Board (Marine Corps).—Colonel John Potts, President.

Marine Barracks.—Colonel John Potts, commanding.

DEPARTMENT OF THE INTERIOR

Secretary of the Interior.—Harold L. Ickes.

Charged with pensions, public lands, Indian Affairs, geological surveys, reclamation of arid lands, and mines.

Under Secretary.—John J. Dempsey.

First Assistant Secretary.—Ebert K. Burlaw.

Assistant Secretary.—Oscar L. Chapman.

Chief Clerk.—Floyd E. Dotson.

Solicitor.—Nathan R. Margold.

Director of Classification.—John Harvey.

Commissioner of the General Land Office.—Fred W. Johnson.

Fish and Wildlife Service.—Ira N. Gabrielson, Director.

Commissioner of the Office of Indian Affairs.—John Collier.

Indian Arts and Crafts Board.—John Collier, Chairman.

FEDERAL ADMINISTRATIVE ORGANIZATION

Director of the Geological Survey.—W. C. Mendenhall.

Commissioner of the Bureau of Reclamation.—John C. Page.

Director of the National Park Service.—Newton B. Drury.

Director of the Bureau of Mines.—R. R. Sayers.

Division of Territories and Island Possessions.—Guy L. Swope.

Territorial Officials.—

Alaska—Ernest Gruening, Governor.

Hawaii—Joseph B. Poindexter, Governor.

Virgin Islands—Charles Harwood, Governor.

Puerto Rico—Rexford G. Tugwell, Governor.

Puerto Rico Reconstruction Administration.—Guy J. Swope, Administrator.

The Alaska Railroad.—Otto F. Ohlson, General Manager.

Oil Administration.—Harold L. Ickes, Secretary of the Interior, Administrator.

Petroleum Coordinator for National Defense.—Harold L. Ickes.

United States Travel Bureau.—W. Bruce Macnamee, Chief.

Director of Grazing.—R. H. Rutledge.

Bituminous Coal Division.—Howard A. Gray, Director.

National Power Policy Committee.—Harold L. Ickes.

DEPARTMENT OF AGRICULTURE

Secretary of Agriculture.—Claude R. Wickard.

Under Secretary.—Paul H. Appleby.

Assistant Secretary.—Grover B. Hill.

Assistants to the Secretary.—Samuel B. Bledsoe, Carl Hamilton, Emery E. Jacobs, Robert H. Shields.

Agricultural Adjustment Administration.—R. M. Evans, Administrator.

Agricultural Marketing Service.—C. W. Kitchen, Chief.

Director of Extension Work.—Milburn L. Wilson.

Director of Research.—James T. Jardine.

Director of Personnel.—T. Roy Reid.

Director of Information.—Morse Salisbury.

Land Use Coordinator.—M. S. Eisenhower.

Director of Agricultural Defense Relations.—M. Clifford Townsend.

Director of Finance and Budget Officer.—W. A. Jump.

Solicitor.—Mastin G. White.

Librarian.—Ralph R. Shaw.

Office of Civilian Conservation Corps Activities.—Fred Morrell, Chief.

Office of Experiment Stations.—James T. Jardine, Chief.

Office of Foreign Agricultural Relations.—Leslie A. Wheeler, Director.

Bureau of Animal Industry.—John R. Mohler, Chief.

Bureau of Dairy Industry.—O. E. Reed, Chief.

Bureau of Plant Industry.—E. C. Auchter, Chief.

Forest Service.—Earle H. Clapp, Acting Chief.

Bureau of Agricultural Chemistry and Engineering.—Henry G. Knight, Chief.

Bureau of Entomology and Plant Quarantine.—P. N. Annand, Chief.

Bureau of Agricultural Economics.—Howard R. Tolley, Chief.

Bureau of Home Economics.—Louise Stanley, Chief.

Commodity Credit Corporation.—J. B. Hutson, President.

Commodity Exchange Administration.—J. M. Mehl, Chief.

Soil Conservation Service.—H. H. Bennett, Chief.

Farm Security Administration.—C. B. Baldwin, Administrator.

Farm Credit Administration.—A. G. Black, Governor.

Federal Farm Mortgage Corporation.—A. G. Black, Chairman.

Economic Adviser.—Mordecai Ezekiel.

Surplus Marketing Administration.—Roy F. Hendrickson, Administrator.

Federal Crop Insurance Corporation.—Rudolph M. Evans, Chairman.

Rural Electrification Administration.—Harry Slattery, Administrator.

III. THE NATIONAL GOVERNMENT

DEPARTMENT OF COMMERCE

Secretary of Commerce.—Jesse H. Jones.

Under Secretary.—Wayne C. Taylor.

Assistant Secretary.—Robert H. Hinckley.

Administrative Assistant to the Secretary.—Malcolm Kerlin.

Solicitor.—South Trimble, Jr.

Chief Clerk and Superintendent.—E. W. Libbey.

Chief of Division of Accounts.—Charles E. Molster.

Chief of Division of Publications.—Clifford F. Mayne.

Chief of Division of Purchases and Sales.—Walter S. Erwin.

Librarian.—Charlotte L. Carmody.

Director of the Bureau of The Census.—James C. Capt.

Civil Aeronautics Administration.

—Donald H. Connolly, Administrator.

Civil Aeronautics Board.—Harlee Branch, Chairman.

Director of the Bureau of Foreign and Domestic Commerce.—Carroll L. Wilson.

Director of the National Bureau of Standards.—Lyman J. Briggs.

Director of the Coast and Geodetic Survey.—L. O. Colbert.

Director of the Bureau of Marine Inspection and Navigation.—Commander Richard S. Field.

Commissioner of the Patent Office.—Conway P. Coe.

Inland Waterways Corporation.—Chester C. Thompson, President-Chairman.

Weather Bureau.—Francis W. Reichelderfer, Chief.

National Inventors' Council.—Charles F. Kettering, Chairman.

DEPARTMENT OF LABOR

Secretary of Labor.—Frances Perkins.

Charged with the duty of fostering, promoting and developing the welfare of the wage earners of the United States and also working towards a solution of labor problems.

Administrative Assistant to the Secretary.—Frances Jurkowitz.

The Assistant Secretary.—Daniel W. Tracy.

Second Assistant Secretary.—(Vacant).

Special Assistant to the Secretary.—Mary La Dame.

Solicitor.—Warner W. Gardner.

Chief Clerk.—(Vacant).

Director of Information.—J. V. Fitzgerald.

Director of Conciliation.—John R. Steelman.

Director of Labor Standards.—Verne A. Zimmer.

Commissioner of Labor Statistics.—Isador Lubin.

Chief of the Children's Bureau.—Katharine F. Lenroot.

Director of the Women's Bureau.—Mary Anderson.

Wage and Hour Division.—(Vacant), Administrator.

Division of Public Contracts.—L. Metcalfe Walling, Administrator.

MISCELLANEOUS EXECUTIVE SERVICES

Civil Service Commission.—Harry B. Mitchell, President; Mrs. Lucille F. McMillin, Arthur S. Flemming.

Interstate Commerce Commission.—Joseph B. Eastman, Chairman; Clyde B. Aitchison, Claude R. Porter, William E. Lee, Charles D. Mahaffie, Walter M. W. Splawn, Carroll Miller, John L. Rogers, J. Haden Alldredge, William J. Patterson, J. Monroe Johnson.

United States Employees' Compensation Commission.—Mrs. Jewell W. Swofford, Chairman; John M. Morin, John J. Keegan.

General Accounting Office.—Lindsay C. Warren, Comptroller General of the United States.

Federal Reserve Board.—Marriner S. Eccles, Chairman; Ronald Ramson, Vice Chairman; M. S. Szymczak, John K. McKee, Ernest G. Draper.

Federal Trade Commission.—William A. Ayres, Chairman; R. E. Freer, Garland S. Ferguson, Ewin L. Davis, Otis B. Johnson, Secretary.

United States Tariff Commission.—Raymond B. Stevens, Chairman; Oscar B. Ryder, Vice Chairman; Edgar B. Brossard, E. Dana Durand; Sidney Morgan, Secretary.

FEDERAL ADMINISTRATIVE ORGANIZATION

Foreign-Trade Zones Board.—Jesse H. Jones, Chairman.

United States Board of Tax Appeals.—J. Edgar Murdock, Chairman.

Federal Power Commission.—Leeland Olds, Chairman; Claude L. Draper, Vice Chairman; Basil Manly, John W. Scott, Clyde L. Seavey.

Federal Communications Commission.—James Lawrence Fly, Chairman.

Veterans' Administration.—Brigadier General Frank T. Hines, Administrator.

Federal Board of Hospitalization.—Brigadier General Frank T. Hines, Chairman.

The Joint Board.—Lt. Col. William P. Scobey, Secretary.

The Army and Navy Munitions Board.—Brigadier General Charles Hines, Secretary.

The Joint Economy Board.—Jarvis Butler, Secretary.

United States Maritime Commission.—Rear Admiral Emory S. Land, Chairman.

Governor of the Panama Canal.—Brigadier General Glen E. Edgerton.

Maritime Labor Board.—Robert W. Bruere, Chairman.

National Labor Relations Board.—H. A. Millis, Chairman.

National Advisory Committee for Aeronautics.—Dr. Jerome C. Hunsaker, Chairman.

Selective Service System.—Brigadier General Lewis B. Hershey, Director.

Federal Board of Surveys and Maps.—T. W. Norcross, Chairman.

The Commission of Fine Arts.—Gilmore D. Clarke, Chairman.

National Mediation Board.—David J. Lewis, Chairman.

National Capital Park and Planning Commission.—Frederick A. Delano, Chairman.

Smithsonian Institution.—

Established 1846 under the terms of the will of James Smithson for the "increase and diffusion of knowledge among men." The former aim is accomplished by the promoting of original, scientific research, and the latter by publications and lectures. The affairs of the institution are managed

by a Board of Regents which cooperates with the Government and with National scientific bodies. Under the direction of the Institution are the National Museum, charged with preserving and utilizing objects of art and ethnological, geological and mineralogical collections belonging to the United States; Bureau of American Ethnology, National Gallery of Art, Freer Gallery of Art, National Zoological Park, Astrophysical Observatory, and the Regional Bureau for the United States International Catalogue of Scientific Literatures.

Secretary—C. G. Abbot.

National Academy of Sciences.—Frank B. Jewett, President; Isaiah Bowman, Vice President; Frederick E. Wright, Home Secretary; L. J. Henderson, Foreign Secretary; Ross G. Harrison, Chairman of the National Research Council.

Pan American Union.—L. S. Rowe, Director General.

American National Red Cross.—Norman H. Davis, Chairman.

Permanent Joint Board on Defense.—F. H. La Guardia, Chairman.

Securities and Exchange Commission.—Edward C. Eicher, Chairman.

Tennessee Valley Authority.—David E. Lilienthal, Chairman; Harcourt A. Morgan, James P. Pope.

Federal Deposit Insurance Corporation.—Leo T. Crowley, Chairman.

National Labor Relations Board.—H. A. Millis, Chairman.

Railroad Retirement Board.—Murray W. Latimer, Chairman.

The National Archives.—Solon J. Buck, Archivist.

Federal Loan Agency.—Jesse H. Jones, Administrator.

Reconstruction Finance Corporation.—Charles B. Henderson, Chairman.

Federal Housing Administration.—Abner H. Ferguson, Administrator.

Federal Home Loan Bank Board.—John H. Fahey, Chairman.

Home Owners' Loan Corporation.—John H. Fahey, Chairman.

Export-Import Bank of Washington.—Warren Lee Pierson, President.

III. THE NATIONAL GOVERNMENT

Defense Plant Corporation—Jesse H. Jones, Chairman.	National Youth Administration—Aubrey Williams, Administrator.
Defense Supplies Corporation—Jesse H. Jones, Chairman.	Civilian Conservation Corps—James J. McEntee, Director.
Defense Homes Corporation—Sam. H. Husbands, President.	Food and Drug Administration—W. G. Campbell, Administrator.
Federal Security Agency.—Paul V. McNutt, Administrator.	Federal Works Agency.—Philip B. Fleming, Administrator.
Social Security Board—Arthur J. Altmeyer, Chairman.	Work Projects Administration—Howard O. Hunter, Acting Commissioner.
Public Health Service—Thomas Parran, Surgeon General.	Public Works Administration—M. E. Gilmore, Commissioner.
U. S. Office of Education—John W. Studebaker, Commissioner.	Public Roads Administration—Thomas H. MacDonald, Commissioner.
Federal Advisory Board for Vocational Education—Clarence Poe, Chairman.	United States Housing Authority—Nathan Straus, Administrator.

MEMBERS OF THE SENATE

COMPILED FROM THE CONGRESSIONAL DIRECTORY, YEAR, 1942

(Dates show beginning of service in the Senate. Names of Republicans are in Roman type; those of Democrats in *Italic*; Farmer Labor in ROMAN CAPS; Progressive in SMALL CAPS.

ALABAMA

John H. Bankhead, 2d (1931).
Lister Hill (1938).

ARIZONA

Carl Hayden (1927).
Ernest W. McFarland (1940).

ARKANSAS

H. W. Caraway (1931).
Lloyd Spencer (1941).

CALIFORNIA

Hiram W. Johnson (1917).
Sheridan Downey (1938).

COLORADO

Edwin C. Johnson (1936).
Vacant.

CONNECTICUT

Francis T. Maloney (1935).
John A. Danaher (1938).

DELAWARE

James H. Hughes (1936).
James M. Tunnell (1940).

FLORIDA

Charles O. Andrews (1936).
Claude Pepper (1936).

GEORGIA

Walter F. George (1922).
Richard B. Russell (1933).

IDAHO

D. Worth Clark (1938).
John Thomas (1940).

ILLINOIS

Scott W. Lucas (1938).
C. Wayland Brooks (1940).

INDIANA

Frederick Van Nuys (1933).
Raymond E. Willis (1940).

IOWA

Guy M. Gillette (1936).
Clyde L. Herring (1936).

KANSAS

Arthur Capper (1919).
Clyde M. Reed (1938).

KENTUCKY

Alben W. Barkley (1927).
A. B. Chandler (1939).

LOUISIANA

John H. Overton (1933).
Allen J. Ellender (1936).

MAINE

Wallace H. White, Jr. (1931).
Ralph O. Brewster (1940).

MARYLAND

Millard E. Tydings (1927).
George L. Radcliffe (1935).

MASSACHUSETTS

David I. Walsh (1926).
Henry Cabot Lodge, Jr. (1936).

MICHIGAN

Arthur H. Vandenberg (1928).
Prentiss M. Brown (1936).

MINNESOTA

Henrik Shipstead (1923).
Joseph H. Ball (1940).

MISSISSIPPI

Theodore G. Bilbo (1935).
Wall Dozey (1941).

MISSOURI

Bennett C. Clark (1933).
Harry S. Truman (1935).

MONTANA

Burton K. Wheeler (1923).
James E. Murray (1935).

NEBRASKA

GEORGE W. NORRIS (1913).
Hugh A. Butler (1940).

NEVADA

Patrick McCarran (1932).
Berkeley L. Bunker (1940).

NEW HAMPSHIRE

Styles Bridges (1936).
Charles W. Tobey (1938).

NEW JERSEY

William H. Smathers (1936).
W. Warren Barbour (1938).

NEW MEXICO

Carl A. Hatch (1934).
Dennis Chavez (1935).

NEW YORK

Robert F. Wagner (1927).
James M. Mead (1938).

MEMBERS OF THE HOUSE OF REPRESENTATIVES

NORTH CAROLINA

Josiah W. Batley (1931).
Robert R. Reynolds (1932).

NORTH DAKOTA

Gerald P. Nye (1925).
William Langer (1940).

OHIO

Robert A. Taft (1938).
Harold H. Burton (1940).

OKLAHOMA

Elmer Thomas (1927).
Josh Lee (1936).

OREGON

Charles L. McNary (1918).
Rufus C. Holman (1938).

PENNSYLVANIA

James J. Davis (1931).
Joseph F. Guffey (1935).

RHODE ISLAND

Peter G. Gerry (1935).
Theodore F. Green (1936).

SOUTH CAROLINA

Ellison D. Smith (1909).
Burnet R. Maybank (1941).

SOUTH DAKOTA

William J. Bulow (1931).
Chan Gurney (1938).

TENNESSEE

Kenneth McKellar (1917).
Tom Stewart (1938).

TEXAS

Tom Connally (1929).
W. Lee O'Daniel (1941).

UTAH

Elbert D. Thomas (1933).
Abe Murdock (1940).

VERMONT

Warren R. Austin (1931).
George D. Aiken (1940).

VIRGINIA

Carter Glass (1920).
Harry F. Byrd (1933).

WASHINGTON

Homer T. Bone (1933).
Mon C. Wallgren (1940).

WEST VIRGINIA

Harley M. Kilgore (1940).
Joseph Rosier (1941).

WISCONSIN

ROBERT M. LA FOLLETTE, JR.
(1925).
Alexander Wiley (1938).

WYOMING

Joseph C. O'Mahoney (1933).
H. H. Schwartz (1936).

MEMBERS OF THE HOUSE OF REPRESENTATIVES

COMPILED FROM THE CONGRESSIONAL DIRECTORY, YEAR, 1942

(Dates show beginning of service in the House. Names of Republicans are in Roman type; those of Democrats in *Italic*; Farmer Labor in ROMAN CAPS; Progressive in SMALL CAPS.

ALABAMA

1. *Frank W. Boykin* (1935).
2. *George M. Grant* (1938).
3. *Henry B. Steagall* (1914).
4. *Sam Hobbs* (1935).
5. *Joe Starnes* (1935).
6. *Pete Jarman* (1936).
7. *Carter Manasco* (1941).
8. *John J. Sparkman* (1936).
9. *Luther Patrick* (1936).

ARIZONA

At Large—*John R. Murdock*
(1936).

ARKANSAS

1. *E. C. Gathings* (1938).
2. *Wilbur D. Mills* (1938).
3. *Clyde T. Ellis* (1938).
4. *Fadjo Cravens* (1939).
5. *David D. Terry* (1934).
6. *W. F. Norrell* (1938).
7. *Oren Harris* (1940).

CALIFORNIA

1. *Clarence F. Lea* (1917).
2. *Harry L. Englebright* (1926).
3. *Frank H. Buck* (1933).
4. *Thomas Rolph* (1940).
5. *Richard J. Welch* (1925).
6. *Albert E. Carter* (1925).
7. *John H. Tolan* (1935).
8. *John Z. Anderson* (1938).
9. *Bertrand W. Gearhart*
(1935).
10. *Alfred J. Elliott* (1937).
11. *Carl Hinshaw* (1938).
12. *Jerry Voorhies* (1936).

13. *Charles Kramer* (1933).
14. *Thomas F. Ford* (1933).
15. *John M. Costello* (1935).
16. *Leland M. Ford* (1938).
17. Vacant.
18. *Ward Johnson* (1940).
19. *Harry R. Sheppard* (1936).
20. *Ed. V. Izac* (1936).

COLORADO

1. *Lawrence Lewis* (1933).
2. *William S. Hill* (1940).
3. *J. Edgar Chenoweth* (1940).
4. *Robert F. Rockwell* (1941).

CONNECTICUT

- At Large—*Lucien J. Mactora*
(1940).
1. *Herman P. Kopplemann*
(1940).
 2. *William J. Fitzgerald* (1940).
 3. *James A. Shanley* (1935).
 4. *Le Roy D. Downs* (1940).
 5. Vacant.

DELAWARE

At Large—*Phillip A. Traynor*
(1940).

FLORIDA

1. *J. Hardin Petersen* (1933).
2. *Lex Green* (1938).
3. *Robert L. F. Sikes* (1940).
4. *Pat Cannon* (1938).
5. *Joe Hendricks* (1936).

GEORGIA

1. *Hugh Peterson* (1935).
2. *E. E. Cox* (1925).

3. *Stephen Pace* (1936).
4. *A. Sidney Camp* (1939).
5. *Robert Ramspeck* (1929).
6. *Carl Vinson* (1914).
7. *Malcolm C. Tarver* (1927).
8. *John S. Gibson* (1940).
9. *B. Frank Wheelchel* (1935).
10. *Paul Brown* (1933).

IDAHO

1. *Compton I. White* (1933).
2. *Henry C. Dworshak* (1938).

ILLINOIS

- At Large—*Stephen A. Day*
(1940).
William G. Stratton (1940).
1. *Arthur W. Mitchell* (1935).
 2. *Raymond S. McKeough*
(1935).
 3. *Edward A. Kelly* (1931).
 4. *Harry P. Beam* (1931).
 5. *Adolph J. Sabath* (1907).
 6. *Anton F. Maciejewski* (1938).
 7. *Leonard W. Schuetz* (1931).
 8. *Leo Kocialkowski* (1933).
 9. *Charles S. Dewey* (1940).
 10. *George A. Paddock* (1940).
 11. *Chauncey W. Reed* (1935).
 12. *Noah M. Mason* (1936).
 13. *Leo E. Allen* (1933).
 14. *Anton J. Johnson* (1938).
 15. *Robert B. Chipperfield* (1938).
 16. *Everett M. Dirksen* (1933).
 17. *Leslie C. Arends* (1935).
 18. *Jessie Sumner* (1938).
 19. *William H. Wheat* (1938).
 20. *James M. Barnes* (1938).

III. THE NATIONAL GOVERNMENT

21. Evan Howell (1940).
22. *Edwin M. Schaefer* (1933).
23. *Laurence F. Arnold* (1936).
24. James V. Heidinger (1940).
25. C. W. (Runt) Bishop (1940).

INDIANA

1. *William T. Schulte* (1933).
2. Charles A. Halleck (1935).
3. Robert A. Grant (1938).
4. George W. Gillie (1938).
5. Forest A. Harness (1938).
6. Noble J. Johnson (1938).
7. Gerald W. Landis (1938).
8. *John W. Boehne, Jr.* (1933).
9. Earl Wilson (1940).
10. Raymond S. Springer (1938).
11. *William H. Larrabee* (1931).
12. *Louis Ludlow* (1929).

IOWA

1. Thomas E. Martin (1938).
2. *William S. Jacobsen* (1936).
3. John W. Gwynne (1935).
4. H. O. Talle (1938).
5. Karl M. Le Compte (1938).
6. Paul Cunningham (1940).
7. Ben F. Jensen (1938).
8. Fred C. Gilchrist (1931).
9. *Vincent F. Harrington* (1936).

KANSAS

1. W. P. Lamberton (1929).
2. U. S. Guyer (1926).
3. Thomas D. Winter (1938).
4. Edward H. Rees (1936).
5. *John M. Houston* (1935).
6. Frank Carlson (1935).
7. Clifford R. Hope (1926).

KENTUCKY

1. *Noble J. Gregory* (1936).
2. *Beverly M. Vincent* (1937).
3. *Emmet O'Neal* (1935).
4. *Edward W. Creal* (1935).
5. *Brent Spence* (1931).
6. *Virgil Chapman* (1931).
7. *Andrew J. May* (1931).
8. *Joe B. Bates* (1938).
9. John M. Robston (1935).

LOUISIANA

1. *F. Edward Hébert* (1940).
2. *Hale Boggs* (1940).
3. *James Domengeaux* (1940).
4. *Overton Brooks* (1936).
5. *Newton V. Mills* (1936).
6. *Jared V. Sanders, Jr.* (1940).
7. *Vance Paluché* (1940).
8. *A. Leonard Allen* (1936).

MAINE

1. James C. Oliver (1936).
2. Margaret Chase Smith (1940).
3. Frank Fellows (1940).

MARYLAND

1. *David J. Ward* (1939).
2. *Wm. P. Cole, Jr.* (1931).
3. *Thomas D'Alessandro, Jr.* (1938).
4. *John A. Meyer* (1940).
5. *Lansdale G. Sasser* (1939).
6. *Katherine E. Byron* (1941).

MASSACHUSETTS

1. A. T. Treadway (1913).
2. Charles R. Clason (1936).
3. *Joseph E. Casey* (1935).
4. *Pehr G. Holmes* (1931).
5. *Edith N. Rogers* (1925).
6. *George J. Bates* (1936).
7. Vacant.
8. *Arthur D. Healey* (1933).
9. *Thomas H. Elliot* (1940).
10. *G. H. Tinkham* (1915).
11. *Thomas A. Flaherty* (1937).
12. *J. W. McCormack* (1928).
13. *R. B. Wigglesworth* (1928).
14. *J. W. Martin, Jr.* (1925).
15. *Charles L. Gifford* (1922).

MICHIGAN

1. *Rudolph G. Tenerowicz* (1938).
2. *Earl C. Michener* (1935).
3. *Paul W. Shafer* (1936).
4. *Clare E. Hoffman* (1935).
5. *Bartel J. Jonkman* (1940).
6. *William W. Blackney* (1938).
7. *Jesse P. Wolcott* (1931).
8. *Fred L. Crawford* (1935).
9. *Albert J. Engel* (1935).
10. *Roy O. Woodruff* (1921).
11. *Fred Bradley* (1938).
12. *Frank E. Hook* (1935).
13. *George D. O'Brien* (1940).
14. *Louis C. Rabaut* (1935).
15. *John D. Dingell* (1933).
16. *John Lestinski* (1933).
17. *George A. Dondero* (1933).

MINNESOTA

1. August H. Andresen (1935).
2. *Joseph P. O'Hara* (1940).
3. *Richard P. Gale* (1940).
4. *Melvin J. Maas* (1935).
5. *Oscar Youngdahl* (1938).
6. *Harold Knutson* (1917).
7. *H. Carl Andersen* (1938).
8. *William A. Pittenger* (1938).
9. R. T. BUCKLER (1935).

MISSISSIPPI

1. *John E. Rankin* (1921).
2. *Jamie L. Whitten* (1941).
3. *W. M. Whittington* (1925).
4. *A. L. Ford* (1935).
5. *Ross A. Collins* (1936).
6. *William M. Colmer* (1933).
7. *Dan R. McGehee* (1935).

MISSOURI

1. *M. A. Romjue* (1923).
2. *William L. Nelson* (1935).
3. *Richard M. Duncan* (1933).
4. *C. Jasper Bell* (1935).
5. *Joseph B. Shannon* (1931).
6. *Phillip A. Bennett* (1940).
7. *Dewey Short* (1935).
8. *Clyde Williams* (1931).
9. *Clarence Cannon* (1923).
10. *Orville Zimmerman* (1935).
11. *John B. Sullivan* (1940).
12. *Walter C. Ploeser* (1940).
13. *John J. Cochran* (1927).

MONTANA

1. *Jeannette Rankin* (1940).
2. *James F. O'Connor* (1936).

NEBRASKA

1. *Oren S. Copeland* (1940).
2. *Charles F. McLaughlin* (1935).
3. *Karl Stefan* (1935).
4. *Carl T. Curtis* (1938).
5. *Harry B. Coffee* (1935).

NEVADA

- At Large—*James G. Scrugham* (1933).

NEW HAMPSHIRE

1. *Arthur B. Jenks* (1936).
2. *Foster Stearns* (1938).

NEW JERSEY

1. *C. A. Wolverton* (1926).
2. *Elmer H. Wene* (1940).
3. *William H. Sutphin* (1931).
4. *D. Lane Powers* (1933).
5. *Charles A. Eaton* (1925).
6. *Donald H. McLean* (1933).
7. *J. Parnell Thomas* (1936).
8. *Gordon Canfield* (1940).
9. *Frank C. Osmer, Jr.* (1938).
10. *F. A. Hartley, Jr.* (1929).
11. *Albert L. Vreeland* (1938).
12. *Robert W. Kean* (1938).
13. *Mary T. Norton* (1925).
14. *Edward J. Hart* (1935).

NEW MEXICO

- At Large—*Clinton P. Anderson* (1940).

NEW YORK

- At Large—*Matthew J. Merritt* (1935).
- Caroline O'Day* (1935).
1. *Leonard W. Hall* (1938).
 2. *W. B. Barry* (1935).
 3. *Joseph L. Pfeiffer* (1935).
 4. *Thomas H. Cullen* (1919).
 5. *James J. Heffernan* (1940).
 6. *Andrew L. Somers* (1925).
 7. *John J. Delaney* (1931).
 8. *Donald L. O'Toole* (1936).
 9. *Eugene J. Keogh* (1936).
 10. *Emmanuel Celler* (1923).
 11. *James A. O'Leary* (1935).
 12. *Samuel Dickstein* (1923).
 13. *Louis J. Capozzoli* (1940).
 14. *Arthur G. Klein* (1941).
 15. *Michael J. Kennedy* (1938).
 16. *William T. Pfeiffer* (1940).
 17. *Joseph Clark Baldwin* (1941).
 18. *M. J. Kennedy* (1930).
 19. *Sol Bloom* (1923).
 20. VITO MARCANTONIO (1938).
 21. *J. A. Gavagan* (1929).
 22. *Walter A. Lynch* (1940).
 23. *Charles A. Buckley* (1935).
 24. *J. M. Fitzpatrick* (1926).
 25. *Ralph A. Gamble* (1937).
 26. *Hamilton Fish* (1920).
 27. *Lewis K. Rockefeller* (1937).
 28. *William T. Byrne* (1936).
 29. *E. Harold Cluett* (1936).
 30. *Frank Crowther* (1919).
 31. *Clarence E. Kilburn* (1940).
 32. *Francis D. Culin* (1928).
 33. *Fred J. Douglas* (1936).
 34. *Edwin Arthur Hall* (1939).

MEMBERS OF THE HOUSE OF REPRESENTATIVES

35. C. E. Hancock (1927).
36. John Taber (1923).
37. W. Sterling Cole (1935).
38. Joseph J. O'Brien (1938).
39. James W. Wadsworth (1933).
40. Walter G. Andrews (1931).
41. Alfred F. Beller (1940).
42. John C. Butler (1941).
43. Daniel A. Reed (1919).

NORTH CAROLINA

1. Herbert C. Bonner (1940).
2. John H. Kerr (1923).
3. Graham A. Barden (1935).
4. Harold D. Cooley (1935).
5. John H. Folger (1941).
6. Carl T. Durham (1938).
7. J. Bayard Clark (1929).
8. W. O. Burgin (1938).
9. R. L. Doughton (1911).
10. A. L. Bulwinkle (1931).
11. Zebulon Weaver (1931).

NORTH DAKOTA

- At Large—Usher L. Burdick (1935).
- Charles R. Robertson (1940).

OHIO

- At Large—George H. Bender (1938).
- Stephen M. Young (1940).
1. Charles H. Elston (1938).
 2. William E. Hess (1938).
 3. Greg Holbrock (1940).
 4. Robert F. Jones (1938).
 5. Cliff Clevenger (1938).
 6. Jacob E. Davis (1940).
 7. Clarence J. Brown (1938).
 8. Frederick C. Smith (1938).
 9. John F. Hunter (1936).
 10. T. A. Jenkins (1925).
 11. Harold K. Claypool (1936).
 12. John M. Voris (1938).
 13. A. D. Baumhart, Jr. (1940).
 14. Dow W. Harter (1933).
 15. Robert T. Secrest (1933).
 16. William R. Thom (1940).
 17. J. Harry McGregor (1940).
 18. Lawrence E. Imhoff (1940).
 19. Michael J. Ktruan (1936).
 20. Martin L. Sweeney (1931).
 21. Robert Crosser (1923).
 22. Frances P. Bolton (1940).

OKLAHOMA

- At Large—Will Rogers (1933).
1. Wesley E. Disney (1931).
 2. Jack Nichols (1935).
 3. Wilburn Cartwright (1927).
 4. Lyle H. Boren (1936).
 5. A. S. Mike Monroney (1938).
 6. Jed Johnson (1926).
 7. Victor Wickersham (1941).
 8. Ross Rizley (1940).

OREGON

1. James W. Mott (1933).
2. Walter M. Pierce (1933).
3. Homer D. Angell (1938).

PENNSYLVANIA

1. Leon Sacks (1936).
2. James P. McGranery (1936).

3. Michael J. Bradley (1936).
4. John Edward Sheridan (1939).
5. Francis R. Smith (1940).
6. Francis J. Myers (1938).
7. Hugh D. Scott, Jr. (1940).
8. James Wolfenden (1928).
9. Charles L. Gerlach (1938).
10. J. R. Kinzer (1930).
11. Patrick J. Boland (1931).
12. J. Harold Flannery (1936).
13. Ivor D. Fenton (1938).
14. Guy L. Moser (1936).
15. Wilson D. Gillette (1941).
16. Robert F. Rich (1930).
17. J. William Ditter (1933).
18. Richard M. Simpson (1937).
19. John C. Kunkel (1938).
20. Benjamin Jarrett (1936).
21. Francis E. Walter (1933).
22. Harry L. Haines (1940).
23. James E. Van Zandt (1938).
24. J. Buell Snyder (1933).
25. Charles I. Faddis (1933).
26. Louis E. Graham (1938).
27. Harve Tibbott (1938).
28. Augustine B. Kelley (1941).
29. Robert L. Rodgers (1938).
30. Thomas E. Scanlon (1940).
31. Samuel A. Weiss (1940).
32. Herman P. Eberharter (1936).
33. Joseph A. McArdle (1938).
34. James A. Wright (1940).

RHODE ISLAND

1. Aime J. Forand (1940).
2. John E. Fogarty (1940).

SOUTH CAROLINA

1. L. Mendel Rivers (1940).
2. H. P. Fulmer (1921).
3. Butler B. Hare (1938).
4. Joseph R. Bryson (1938).
5. James P. Richards (1933).
6. John L. McMullan (1938).

SOUTH DAKOTA

1. Karl E. Mundt (1938).
2. Francis Case (1936).

TENNESSEE

1. B. Carroll Reece (1933).
2. John Jennings, Jr. (1940).
3. Estes Kefauver (1939).
4. Albert Gore (1938).
5. J. Percy Priest (1940).
6. Wirt Courtney (1939).
7. Herron Pearson (1935).
8. Jere Cooper (1929).
9. Clifford Davis (1940).

TEXAS

1. Wright Patman (1929).
2. Martin Dies (1931).
3. Lindsey Beckworth (1938).
4. Sam Rayburn (1913).
5. H. W. Sumners (1913).
6. Luther A. Johnson (1923).
7. Nat Patton (1935).
8. Albert Thomas (1936).
9. J. J. Mansfield (1917).
10. Lyndon B. Johnson (1937).
11. William R. Poage (1936).
12. Fritz G. Lanham (1919).

13. Ed Gossett (1938).
14. Richard M. Kleberg (1931).
15. Milton H. West (1933).
16. R. Ewing Thomason (1938).
17. Sam M. Russell (1940).
18. Eugene Worley (1940).
19. George H. Mahon (1935).
20. Paul J. Kilday (1938).
21. Charles L. South (1935).

UTAH

1. Elbert D. Thomas (1940).
2. J. W. Robinson (1933).

VERMONT

- At Large—Charles A. Plumley (1935).

VIRGINIA

1. Schuyler O. Bland (1918).
2. Winder R. Harris (1941).
3. Dave E. Satterfield, Jr. (1937).
4. Patrick H. Drewry (1920).
5. Thomas G. Burch (1931).
6. C. A. Woodrum (1923).
7. A. Willis Robertson (1933).
8. Howard W. Smith (1931).
9. John W. Flannagan, Jr. (1931).

WASHINGTON

1. Warren G. Magnuson (1936).
2. Henry M. Jackson (1940).
3. Martin F. Smith (1933).
4. Knute Hull (1933).
5. Charles H. Leavy (1936).
6. John M. Coffee (1936).

WEST VIRGINIA

1. Robert L. Ramsay (1940).
2. Jennings Randolph (1933).
3. Andrew Edmiston (1933).
4. George W. Johnson (1933).
5. John Kee (1933).
6. Joe L. Smith (1929).

WISCONSIN

1. Lawrence H. Smith (1941).
2. HARRY SAUTHOFF (1940).
3. William H. Stevenson (1940).
4. Thad F. Wastelowski (1940).
5. Lewis D. Thill (1938).
6. Frank B. Keefe (1938).
7. Reid F. Murray (1938).
8. Joshua L. Johns (1938).
9. MERRILL HULL (1935).
10. B. J. GEHRMANN (1935).

WYOMING

- At Large—John J. McIntyre (1940).

ALASKA

- Anthony J. Dimond (1933).

HAWAII

- Samuel W. King (1935).

PHILIPPINE ISLANDS

- Joaquin M. Elizalde (1938).

PUERTO RICO

- Bolívar Pagán (1940).

III. THE NATIONAL GOVERNMENT

FEDERAL JUDICIAL ORGANIZATION

BY WILLIAM M. SCHUYLER

EDITOR, *The American Year Book*

SUPREME COURT OF THE UNITED STATES

Harlan F. Stone (New York), Chief Justice of the United States, appointed 1941.

Owen J. Roberts (Pennsylvania), appointed 1930.

Hugo L. Black (Alabama), appointed 1937.

Stanley F. Reed (Kentucky), appointed 1938.

Felix Frankfurter (Massachusetts), appointed 1939.

William Orville Douglas (Minnesota), appointed 1939.

Frank Murphy (Michigan), appointed 1940.

James F. Byrnes (South Carolina), appointed 1941.

Robert H. Jackson (New York), appointed 1941.

Officers of the Supreme Court:

Clerk—Charles Elmore Cropley.

Deputy Clerks—Reginald C. Dilli,

Hugh W. Barr, Harold B. Willey.

Marshal—Thomas E. Waggaman.

Reporter—Ernest Knabel.

Librarian—Oscar D. Clarke.

CIRCUIT COURT OF APPEALS OF THE UNITED STATES

District of Columbia Judicial Circuit.

—Mr. Chief Justice Stone.

First Circuit.—Mr. Justice Frankfurter; Calvert Magruder (Massachusetts), John C. Mahoney (Rhode Island), Peter Woodbury (New Hampshire).

Second Circuit.—Mr. Justice Jackson; Learned Hand (New York), Thomas W. Swan (Connecticut), Augustus N. Hand (New York), Harrie Brigham Chase (Vermont), Charles E. Clark (Connecticut), Jerome N. Frank (New York).

Third Circuit.—Mr. Justice Roberts; William Clark (New Jersey), Albert Branson Maris (Pennsylvania), John Biggs, Jr. (Delaware), Charles Alvin Jones (Pennsylvania), Herbert F. Goodrich (Pennsylvania).

Fourth Circuit.—Mr. Chief Justice Stone; John J. Parker (North Carolina), Morris A. Soper (Maryland), Armistead M. Dobie (Virginia).

Fifth Circuit.—Mr. Justice Black; Rufus E. Foster (Louisiana), Samuel H. Sibley (Georgia), Joseph C. Hutcheson, Jr. (Texas), Edwin R. Holmes (Mississippi), Leon McCord (Alabama).

Sixth Circuit.—Mr. Justice Reed; Xenophon Hicks (Tennessee), Elwood Hamilton (Kentucky), Charles C. Simons (Michigan), Florence E. Allen (Ohio), John D. Martin (Tennessee), Thomas F. McAllister (Michigan).

Seventh Circuit.—Mr. Justice Byrnes; Evan A. Evans (Wisconsin), William M. Sparks (Indiana), J. Earl Major (Illinois), Sherman Minton (Indiana), Otto Kerner (Illinois).

Eighth Circuit.—Mr. Justice Murphy; Kimbrough Stone (Missouri), John B. Sanborn (Minnesota), Archibald K. Gardner (South Dakota), Joseph W. Woodrough (Nebraska), Seth Thomas (Iowa), Harvey M. Johnsen (Missouri).

Ninth Circuit.—Mr. Justice Douglas; Curtis D. Wilbur (California), Francis A. Garrecht (Washington), William Denman (California), Clifton Mathews (California), Bert E. Haney (Oregon), Albert Lee Stephens (California), William Healey (Idaho).

Tenth Circuit.—Mr. Justice Murphy; Orie L. Phillips (Colorado), Sam G. Bratton (New Mexico), Walter A. Huxman (Kansas), Alfred P. Murrah (Oklahoma).

UNITED STATES COURT OF CUSTOMS AND PATENT APPEALS

Finis James Garrett (Tennessee), Presiding Judge, appointed 1929.

Oscar E. Bland (Indiana), appointed 1923.

FEDERAL PROSECUTIONS AND JUDICIAL DECISIONS

Charles Sherrod Hatfield (Ohio), appointed 1923.

Irvine L. Lenroot (Wisconsin), appointed 1929.

Joseph R. Jackson (Montana), appointed 1937.

UNITED STATES COURT OF APPEALS FOR THE DISTRICT OF COLUMBIA

D. Lawrence Groner, Chief Justice.

Harold M. Stephens.

Justin Miller.

Henry White Edgerton.

Fred M. Vinson.

Wiley Rutledge.

COURT OF CLAIMS OF THE UNITED STATES

Richard S. Whaley (South Carolina), Chief Justice, appointed 1939.

Benjamin H. Littleton (Tennessee), appointed 1929.

Samuel E. Whitaker (Tennessee), appointed 1939.

Marvin Jones (Texas), appointed 1940.

Joseph W. Madden (Illinois), appointed 1941.

DISTRICT COURT OF THE UNITED STATES FOR THE DISTRICT OF COLUMBIA

Alfred A. Wheat, Chief Justice.

James M. Proctor.

F. Dickinson Letts.

Daniel W. O'Donoghue.

Jennings Bailey.

Peyton Gordon.

Oscar R. Luhring.

T. Alan Goldsborough.

James W. Morris.

Jesse C. Adkins.

Bolitho J. Laws.

David A. Pine.

UNITED STATES CUSTOMS COURT

Webster J. Oliver, Presiding Judge.

William J. Tilson.

Frederick W. Dallinger.

Genevieve R. Cline.

David H. Kincheloo.

William J. Keefe.

Thomas J. Walker.

UNITED STATES MARSHAL'S OFFICE

United States Marshal.—John B. Colpoys.

Chief Deputy Marshal.—C. Michael Kearney.

UNITED STATES ATTORNEY'S OFFICE

United States Attorney, District of Columbia.—Edward M. Curran.

Assistants.—John W. Fihelly, Charles B. Murray, George E. McNeil, Cecil R. Heflin, Allen J. Krouse, William Hitz, Jr., Arthur J. McLaughlin, John H. Mitchell, Grace B. Stiles, Brewster H. Marshall, Bernard J. Long, Evan T. Davis, John B. Diamond, John L. Laskey, John L. Smith, Jr., Maurice F. McInerney, Dennis McCarthy, Bernard Margolius, Stephen C. Miller, John C. Conliff, Jr., Richard R. Horner.

FEDERAL PROSECUTIONS AND JUDICIAL DECISIONS

By PAUL A. FREUND

PROFESSOR, HARVARD LAW SCHOOL

GENERAL

For the first time since 1932, the cases filed in the Federal courts in 1941 fiscal year in which the United States was a party exceeded in number the private cases filed. The numbers were, respectively, 14,544 and 14,365. A steady increase in the proportion of government cases has been a characteristic of Federal judicial business in recent years. For the past

fiscal year, the increase is attributable chiefly to a large rise in the number of condemnation cases, largely in connection with the defense program, and in the number of government contract actions, notably on notes due to the Federal Housing Authority and other government lending agencies.

In contrast, the number of Federal criminal cases filed during the fiscal year 1941 was smaller than for any

III. THE NATIONAL GOVERNMENT

year in the last decade. Of this class, there were 31,823 cases commenced, and 9,169 pending at the close of the fiscal year.

ANTI-TRUST LAWS—LABOR UNION ACTIVITIES

The most notable decision of 1941 in the field of antitrust law was *United States v. Hutcheson*, 312 U.S. 219, which carried further the removal of labor union activities from the ambit of the Sherman Act. In the previous year, in *Apex Hosiery Co. v. Leader*, 310 U.S. 469, the Supreme Court had held that the Sherman Act was not applicable to a sit-down strike involving unlawful damage to property and a refusal of the strikers to permit the withdrawal and shipment of goods for interstate delivery, where there was no showing that competitive conditions in the market were appreciably affected (see THE AMERICAN YEAR BOOK, 1940, p. 157). It is now held in the *Hutcheson* decision, a criminal case, that the immunity of union activities does not depend on the degree to which the interstate market is affected. Instead, the immunity extends to all peaceful and ordinary union activities, including jurisdictional strikes and a boycott of the employer's product in the hands of distributors. This result was reached in the light of Section 20 of the Clayton Act, which provides that specified labor conduct shall not be deemed illegal. This Section had been construed by the Court in earlier decisions not to legalize so-called secondary boycotts. Those decisions are necessarily overruled by the *Hutcheson* case. The technique of overruling called forth a dissent from Chief Justice Hughes and Justice Roberts, and a separate opinion from Justice Stone. The majority opinion leaned heavily on the Norris-LaGuardia Act, which by its terms enlarged the definition of labor dispute beyond that of the Clayton Act decisions, and strictly limited the issuance of injunctions by the Federal courts in such disputes. This act was held by the Court to evince a significant legislative policy which the

courts ought to apply, not only in the field of the injunction with which the Act specifically dealt, but also in other types of cases, including criminal prosecutions.

The test laid down in the *Apex* case may still be relevant where the labor activities, perhaps because they involve violence, are not protected by the Clayton and Norris-LaGuardia acts. But neither the *Apex* nor the *Hutcheson* decision grants complete immunity under the anti-trust laws to labor activities. Where these activities are linked with an unlawful combination by employers, they presumably remain illegal under the Sherman Act.

The remedial provisions of the Sherman Act were limited in *United States v. The Cooper Corporation*, 312 U.S. 600, holding that the United States may not maintain an action for treble damages under the act; this type of remedy is available only to private parties.

ANTI-TRUST LAWS AS APPLIED TO NATIONAL DEFENSE

It has been recognized that the defense and war efforts of industry may entail concerted action on the part of industries which would raise serious problems of legality under the anti-trust laws. Accordingly, the Attorney General, on April 29, 1941, addressed a letter to the General Counsel of the Office of Production Management indicating the policy to be followed by the Department of Justice in applying the anti-trust laws to activities under the defense program. In substance, the Department declares that it will not prosecute where industry committees are established at the request of the Office of Production Management or the Office of Price Administration and where the general plan of action of such committees, as, for example, the allocation of orders, is approved by the Department. Specific action within the area of general approval is to be authorized by the General Counsel of the OPM or of the OPA. The Department, however, reserves freedom to institute civil actions to en-

FEDERAL PROSECUTIONS AND JUDICIAL DECISIONS

join continuance of practices deemed not to be in the public interest.

Cooperation of a more positive sort has also been established between the Department of Justice and the defense agencies. Acting on information certified by the administrator of OPA, which indicated that brokers in the scrap iron and steel industry had achieved a monopoly over these metals in certain regions, with enhancement of prices and stimulation of hoarding, the Department undertook an investigation under the anti-trust laws. Other proceedings, for example an indictment against hat manufacturing companies and labor unions alleging a conspiracy to fix prices on field hats purchased by the War Department, have been designed to break down artificial prices in the military procurement program.

CARTELS

Also related directly to the defense program are proceedings against international cartels which have operated to restrict production in this country and to close foreign markets to American producers. Indictments were returned by a grand jury in New York against I. G. Farben Industries, the Aluminum Company of America, and others, charging restraint of trade in the magnesium industry. Similar indictments were returned against other companies charging restrictions on optical instruments and tungsten carbide. The investigations showed, according to the Department of Justice, "startling evidence of the German influence in domestic industries essential to national defense. The influence is ordinarily felt through foreign cartel arrangements which gave German cartels the dominant position over important technological development in American industries."

A cartel arrangement in the drug industry was terminated by consent decree affecting Winthrop Chemical Corporation and the Bayer Company, subsidiaries of Sterling Products, Inc., together with I. G. Farben. The decree, among other things, enables the American companies to increase their

participation in Latin American markets, and the companies have undertaken to enlarge their research facilities in fields where formerly reliance was placed on German research under contracts of the kind now dissolved.

FOOD

Pursuant to its policy of undertaking intensive nationwide enforcement of the anti-trust laws in selected fields—a policy already applied in the building industries—the Department made widespread attacks on asserted restraints in the food industry. In four states, Connecticut, California, Massachusetts, and Tennessee, criminal proceedings were instituted against food distributors engaged in price-fixing activities in the guise, it was alleged, of compliance with state unfair practices acts. The Department has not challenged the validity of these state statutes but has insisted that they can not sanction horizontal price-fixing. Criminal proceedings were also begun against baking companies in Philadelphia and the District of Columbia, against food distributors in Denver, against milk distributors in New York City, and against distributors of fruit in Los Angeles.

The meat packing industry was the subject of suit in Oklahoma, under an allegation that the packers were fixing the prices of hogs, and in Illinois, under an allegation that they were fixing the prices of sheep in the Chicago livestock market. Further, the American Meat Institute and 14 packing companies were indicted in Chicago for an alleged conspiracy of 13 years' standing to fix both the prices paid to farmers and the prices charged to consumers.

RAILROADS

A consent decree was entered in the proceeding against the Association of American Railroads, whereby the individual roads are left free to enter into direct transportation arrangements with motor carriers regarding through rates, joint rates, the advancing of charges, and the like.

III. THE NATIONAL GOVERNMENT

COPYRIGHTS

Litigation begun in 1934 against the American Society of Composers, Authors and Publishers was ended by a consent decree. This provides, among other things, that the Society will not take exclusive rights to the public performance of musical compositions of its members, or discriminate among the users of copyrighted music, or require commercial users to take rights to all its music as a condition of securing a license for any. The decree also brings about certain changes in the internal structure of the Society, notably a change from a self-perpetuating to a membership-elected board of directors, and the establishment of a more equitable scheme of royalties to the members.

USE OF CRIMINAL PROCESS

The widespread use of grand jury investigation and indictment in the enforcement of the anti-trust laws, together with or in lieu of civil proceedings, raises the question of the appropriateness of the criminal process and sanctions. The burden of proof in criminal cases, the reluctance of juries to convict for offenses not involving moral turpitude, the moderate punishment which courts are willing to impose, all suggest the inappropriateness of the criminal process. The compelling consideration in its use, however, is probably the advantage derived from the investigatory powers of the grand jury. Greater reliance on the civil process may await the granting of more adequate investigatory powers to the Department of Justice and the strengthening of the civil sanctions in the anti-trust laws, possibly by granting a right of action for treble damages to the United States and by disqualifying participating directors or officers from holding such positions for a period of years.

NATIONAL LABOR RELATIONS BOARD

Two questions of some importance in the administration of the National Labor Relations Act were put at rest by the Supreme Court. In *H. J.*

Heinz Co. v. N.L.R.B., the Board was sustained in regarding as an unfair labor practice the refusal of an employer to execute a written contract embodying the terms of a collective bargaining agreement, although the statute does not compel an agreement but only a genuine effort to reach an agreement. When one is reached, a signed statement of its terms may be required. In *Phelps Dodge Corp. v. N. L. R. B.*, 313 U.S. 177, the Board was upheld in regarding as an unfair labor practice a refusal to hire applicants on the ground of prior union activity; and an award of "back pay" to the applicants was sustained as against the contention that such a decree could not be given in favor of persons who had never been in the company's employ.

A third issue was left unresolved: the extent to which statements by employers may be held to be unfair labor practices. In *N.L.R.B. v. Virginia Electric & Power Co.*, involving statements by employer to employees concerning union membership, the Court ruled that the Board had not clearly explained whether its order rested on such statements or on other activities of the employer, and accordingly the case was remanded to the Board for clarification. The opinion indicates that, in considering the use of words as an unfair labor practice, "the whole complex of activities" of which the words may be a part should be scrutinized with a view to determining whether the employer were intimidated or coerced.

FEDERAL CRIMES

In the fiscal year 1941, 32,207 cases involving 49,237 defendants were disposed of on the Federal criminal dockets. Of these defendants, more than 81 per cent were convicted. Of the cases actually tried, more than 96 per cent resulted in convictions.

The defense and war program gave rise to prosecutions under statutes dealing with espionage, sabotage, train wrecking, control of exports, registration of foreign agents, and the Selective Service Act. Relatively few

FEDERAL PROSECUTIONS AND JUDICIAL DECISIONS

prosecutions were found to be necessary under the last-named act; only 303 convictions were entered.

CIVIL RIGHTS

The authority of the National Government to prosecute for violations of civil liberties is limited under the Constitution largely to actions of public officers which deny due process of law and to actions of private persons which interfere with nationally granted privileges or immunities. The field of Federal safeguards was extended by the Supreme Court in *United States v. Classic*, 313 U.S. 299, to protection against corrupt practices in a state primary election for members of Congress, at least in a state where the primary is substantially tantamount to the final election. This decision, which involved an issue both of constitutional power and of statutory construction, overruled the case of *Newberry v. United States*, 256 U.S. 232, decided in 1921.

CONTEMPT OF COURT

Another overruling occurred in *Nye v. United States*, 313 U.S. 33, holding that a Federal judge may not summarily punish for contempt of court where the conduct in question, not being a violation of a court order, occurred at a distance from the court. A Federal statute enacted in 1831 limited the power over contempt to conduct occurring "in the presence of" the court or "so near thereto as to obstruct the administration of justice." A decision in 1918 had held that the statute set up a casual, rather than a geographical, test. The present decision, in restoring the literal meaning of the statute, requires that conduct which is an interference with the administration of justice, but which does not take place in the vicinity of the court itself, as, for example, the bribing of witnesses, shall be punished through the ordinary criminal processes, with their safeguards to the accused, and not by summary procedure before the judge.

ADMINISTRATIVE LAW

An end came to the litigation in *United States v. Morgan*, 313 U.S. 409, which began 11 years earlier as a proceeding in the Department of Agriculture to fix rates of commission men at the Kansas City livestock market. Three prior appeals to the Supreme Court had produced important decisions on the requirements of a fair hearing in the rate-making process, notably the right of the parties to be apprised of the evidence to be taken into consideration by the administrative agency, and the duty of the ultimate deciding officer to hear the case, at least in the sense of considering the printed record and briefs of counsel. The final appeal turned chiefly on the alleged bias of the Secretary of Agriculture, the deciding officer, in view of a letter addressed by him to the press criticizing a prior decision of the Court in the litigation, and his alleged failure adequately to consider the evidence. The Supreme Court found that the letter did not show bias which would disqualify the Secretary, and the trial court was rebuked for permitting the Secretary to be examined at length concerning the extent of his consideration of the record. To have approved such an interrogation of the Secretary would have been, in effect, to sanction a double standard for the review of judicial and of administrative decisions. Judges are not required to explain in the witness box the reasons for their decisions or the nature of their study of the evidence; their findings of fact, and the regularity of the hearing, afford an adequate safeguard and an adequate basis for appellate review. "It will bear repeating," said the Court, "that, although the administrative process has had a different development and pursues somewhat different ways from those of courts, they are to be deemed collaborative instrumentalities of justice and the appropriate independence of each should be respected by the other."

III. THE NATIONAL GOVERNMENT

CIVIL SERVICE IN THE UNITED STATES

By HARRY B. MITCHELL

PRESIDENT, UNITED STATES CIVIL SERVICE COMMISSION

THE MERIT SYSTEM IN WAR TIME

The wisdom of the farmers of the Civil Service Act of 1883 was amply attested during the period of the first World War, and it has again been made manifest during the extreme pressures of the current national defense effort. Broad principles of open competition are laid down in that act, with the saving clause that when the President so decides he may by formal published order make any necessary exceptions to the open competition for particular positions or groups of positions.

More than two years ago, when Germany's attack on Poland aroused this nation to the need for immediate preparedness for national defense, the Civil Service Commission secured from the President an order authorizing it to permit emergency appointments without competition in any public exigency involving the government's neutrality and preparedness program. This order was amplified on the Commission's recommendation a year later, and the Commission has thus had this special authority to permit immediate appointments of qualified persons whenever it decides that the usual competitive procedure will not produce the desired results within the time required.

RECRUITING AGENCIES

When numerous Federal agencies are calling for great increases in their personnel the value of a central recruiting and personnel agency is clear. It obviates the necessity for maintaining a recruiting office by each agency; it prevents bidding against each other by the different establishments, and it permits fair distribution of the qualified personnel available. The Federal Civil Service Commission has a central office in Washington, 13 district offices, and nearly 5,000 local boards of civil service examiners scat-

tered throughout the country and in Puerto Rico, Hawaii, Alaska, Virgin Islands, Philippines, and Canal Zone. The 13 district offices are manned by full-time employees on the Commission's payroll, but the local board members are on the rolls of other offices and are assigned to the holding of examinations, the giving out of applications and information only when required and as an incident to their regular duties. These board members, however, are on call whenever needed for emergency recruiting duties.

The Commission has intensified its recruiting by utilizing every channel of publicity for its examinations including newspapers, trade journals and other publications, the radio, the motion picture industry, colleges and trade schools, and labor, professional and scientific organizations. It has secured the active aid and assistance of other governmental organizations such as the Social Security Board (including the Employment Service), the Railroad Retirement Board, and the Post Office Department. It sends special representatives to colleges and to meetings of trade and labor organizations and other promising sources of supply for the many hundreds of different kinds of positions for which there is great need of qualified civilians.

The Commission has speeded up its operations in innumerable ways, and has decentralized much of its authority so that its district managers and their field staff, and the members of rating boards throughout the country may make immediate decisions in meeting the needs of defense establishments on the ground. For the more critical types of work the Commission has announced continuously open examinations for which applications are received at any time, are rated immediately upon receipt, and the resulting eligibles certified to ap-

CIVIL SERVICE IN THE UNITED STATES

pointing officers within a few hours after the applications are filed.

In the national defense program of the Federal Government, the Commission has kept as its fundamental objective the purpose of seeing that the personnel needed by defense agencies is furnished and is actually on duty by the time needed.

INTERDEPARTMENTAL PLACEMENT SERVICE

Two other aids for serving the defense needs of the government are in active use that were not available during the World War. One of these is known as the Interdepartmental Placement Service, which contains full information as to the qualifications of approximately 700,000 Federal employees, the file being steadily increased at the rate of 25,000 new employees monthly. This Interdepartmental Placement Service is used to provide defense agencies with information as to persons already employed in the government possessing the special qualifications required for any duty, and these employees may be transferred to where their services are most needed.

ROSTER OF SCIENTISTS AND SPECIALISTS

The second aid is what is known as the National Roster of Scientific and Specialized Personnel developed under the joint auspices of the National Resources Planning Board and the Federal Civil Service Commission, with Dr. Leonard Carmichael, president of Tufts College, as director. It is probably the most comprehensive and analytical list of the nation's scientists and professional personnel that has ever been available. More than 300,000 scientists throughout the country have been asked to provide the government with information

necessary to determine their qualifications for particular types of work and their availability for service in the national defense program. A major portion of the nation's scientists and other specialists have responded to this request and are now registered on the Roster. Their qualifications are coded and the data placed on punch cards. This permits rapid machine selection of persons possessing practically any pattern of qualifications or combination of scientific skills which defense needs may require. Many thousands of names have already been submitted to defense agencies from this Roster for employment, both civilian and military, full time, part time, and in a consultant capacity.

GROWTH OF EXECUTIVE CIVIL SERVICE

As reported in 1940, the national defense program has greatly accelerated the employment of personnel in the Federal Government. The accompanying table shows this employment on a two-year basis as of the end of each fiscal year. During September, 1941, the total number reached 1,487,925. The War Department employed 397,963 of this number, and the Navy Department 255,264. The War Department's civilian personnel exceeded the total number employed by the postal service for the first time. The total number employed by the Post Office Department during September was 319,501. The number of competitive classified positions increased from June 30, 1940 to June 30, 1941 by 263,391; and the unclassified and exempt positions increased by 91,939 during the same period. The total number of persons employed in the Executive branch in the District of Columbia during September was 191,588, an all-time record.

	June 30, 1933	June 30, 1935	June 30, 1937	June 30, 1939	June 30, 1941
Competitive classified positions . . .	456,096	455,229	532,073	622,832	990,218
Unclassified and exempt positions . .	109,336	264,211	309,591	297,478	367,932
Total	565,432	719,440	841,664	920,310	1,358,150

III. THE NATIONAL GOVERNMENT

MEN IN THE SERVICE

Both by Congressional enactment and executive orders the rights of government employees as well as of candidates for government employment have been protected in connection with their military service. The Congress by the Acts of Aug. 27, 1940 and of Sept. 16, 1940 provided that the positions of government employees who are called to military duty or training under these acts should be held open for them upon their return, or other positions of like status and pay. Later acts have protected their right to continue annual leave pay or benefits, and government employees other than temporary employees who enter upon active military or naval service with the land or naval forces of the government after May 1, 1940 will be restored to their former positions or to positions of like seniority, status, and pay upon the termination of such service.

Executive orders have been issued which protect the rights of eligibles on the Commission's registers so that the period of their military service does not count against their period of eligibility; and persons prevented from entering or competing in examinations because of being in training or in active service will be permitted to file application within 90 days of their release from such service for any examination provided that the register of eligibles is still in existence at the time the application is filed. If an eligible, during the period of his military service, loses an opportunity to be considered for civilian employment his name will be restored to the head of the eligible register for prior consideration after his return from military duty.

THE RAMSPECK ACT

This act was approved Nov. 26, 1940 and was one of the most important measures in the history of civil service legislation. It authorizes the President to extend the scope both of the Civil Service Act and of the compensation Classification Act, with a special provision for the establishment in each governmental agency of

boards of review, on which employees have representation, to hear appeals from efficiency ratings.

The President by executive order of April 23, 1941, issued under the Ramspect Act, provided for the extension of the provisions of the Civil Service Act to approximately 182,000 Federal positions, effective Jan. 1, 1942. After this date the incumbents of such positions may be proposed for classification into the civil service system subject to non-competitive examination and the other provisions of this act and executive order.

PRESIDENT'S COMMITTEE ON CIVIL SERVICE IMPROVEMENT

This Committee, which was headed by Associate Justice Stanley Reed of the United States Supreme Court, and which was appointed by executive order of Jan. 31, 1939 to make "a comprehensive study of methods of recruiting, testing, selecting, promoting, transferring, removing, and reinstating personnel" for the positions to which the order related, submitted its report on Feb. 24, 1941, which was published as House of Representatives Document No. 118, 77th Congress, 1st session. The report is comprehensive and summarizes many studies made for the Committee during the two years of existence. The Committee recommended that practically all positions be brought within the competitive classified service. For the attorney and other legal positions in the Federal Government it recommended a special procedure to be administered by a Board of Legal Examiners.

CIVIL SERVICE IN THE STATES

California.—By popular approval of a charter amendment the Board of Supervisors of San Mateo County was empowered to set up a merit system for county employees. The city of Redwood adopted a merit system for its employees; and Torrance passed an ordinance establishing a civil service system for all employees not covered by the police and fire departments merit system which was adopted in 1934.

CIVIL SERVICE IN THE UNITED STATES

Florida.—Fort Lauderdale adopted a civil service system, and the city of Clearwater, by referendum vote, provided in its civil service law that two members of the Civil Service Commission be selected by the employees, two by the City Commission, and the fifth member by these four members.

Indiana.—A new merit system has been established covering all state institutions, the board of health, the department of public welfare (including county departments of public welfare), unemployment compensation and employment services, and the Indiana Library and Historical Department.

Iowa.—A civil service system was adopted for employees of Ottumwa County.

Kansas.—The House of Representatives passed a bill calling for a statewide merit system.

Maine.—The city of Portland approved a merit system for all employees.

Massachusetts.—By legislation, cities over 12,000 population may voluntarily adopt civil service systems which are to be administered by the state personnel agency.

Michigan.—Monroe adopted a merit system covering all employees, and a charter amendment was adopted in April by Detroit voters changing the merit system as applying to the police department. The principal changes place civilian employees of the police department under the jurisdiction of the city Civil Service Commission, and give to the Commissioner of Police responsibility for the recruitment of patrolmen.

Minnesota.—Blue Earth adopted an ordinance placing the members of its police department under civil service, thereby becoming the 39th municipality of Minnesota to place its police officers under civil service.

Missouri.—At a special election St. Louis voted to adopt a comprehensive merit system for the city government.

New Jersey.—Fairlawn, Fort Lee, and Ventnor adopted civil service systems for their employees. New Jersey counties and cities may voluntar-

ily adopt civil service systems which are then administered by the state personnel agency.

New Mexico.—The Legislature repealed the civil service system which had been created in 1939 for seven state agencies and institutions.

New York.—The Legislature approved a bill providing for the first wholesale extension of the merit system to every jurisdiction within the state. Each county may select from among the three types of civil service administration already existing in the state: an administrative civil service commission, a county personnel officer, and administration by the State Civil Service Commission. Failure to adopt one of these options by July 1, 1943 automatically brings the county under the jurisdiction of the State Commission. Each county may change its form of administration after July 1, 1944, should the system adopted prove unsatisfactory. There is also a provision in the act which permits a city to abolish its own Commission at any time and come under the State Commission. It is estimated that 95 per cent of the 8,000 city jobs in Buffalo are now under the merit system instead of the former 45 per cent.

North Carolina.—A change was made in the merit system procedures for handling the recruitment and selection of personnel under the Federal Social Security Act for the State Unemployment Compensation Commission, State Department of Health, State Board of Charities and Public Welfare, and State Commission for the Blind. The new law establishes a five-member Merit System Council to take over the work of three separate merit system councils which had theretofore operated in this field. The General Assembly also authorized the Governor to appoint a special commission to study the merit system for more general application to the state government.

Pennsylvania.—Whenever a policeman is suspended or discharged by a city council of any third class city he may appeal to the Court of Common Pleas, which shall hear the charges

III. THE NATIONAL GOVERNMENT

"de novo," according to a recent amendment to the Police Civil Service Act. If the charges are dismissed the policeman shall receive full compensation for the period of suspension.

Rhode Island.—The Legislature amended the State Civil Service Law to provide for the blanketing in of all employees with ten years' service, with qualifying examinations to be given to those with five years of service.

Tennessee.—Some time ago Nashville adopted a merit system covering all employees, and this system was upheld by the Tennessee State Supreme Court.

Texas.—The voters in November approved a state constitutional amendment which permits indefinite tenure for appointive employees of

municipalities having civil service laws. Formerly the constitution limited to two years the terms of all offices for which there were no other fixed terms.

Vermont.—The Legislature authorized the Governor to establish a classification and pay plan and to prescribe rules and regulations for a merit system of personnel administration.

Washington.—The Office of the City Treasurer in Seattle reported, that, when that office was under the spoils system, it had 75 employees with cash transactions totaling \$41,014,000, whereas under the existing merit system it has 50 employees to administer cash transactions totaling \$149,536,946.

PERIODICAL PUBLICATIONS

Army and Navy Journal

1701 Connecticut Ave., N.W.,
Washington, D.C.

Civil Service Standard

277 Broadway, New York City.

Congressional Digest

2131 LeRoy Place N.W., Washing-
ton, D.C.

Congressional Directory

U.S. Government Printing Office,
Washington, D.C.

Congressional Record

U.S. Government Printing Office,
Washington, D.C.

United States News

2201 M Street N.W., Washington,
D.C.

COGNATE SOCIETIES AND RESEARCH INSTITUTIONS

(For further information, the reader may address the following organizations)

ACADEMY OF POLITICAL SCIENCE, Fayer-
weather Hall, Columbia University,
New York City.

AMERICAN ACADEMY OF POLITICAL AND
SOCIAL SCIENCE, 3457 Walnut St.,
Philadelphia, Pa.

AMERICAN BAR ASSN., 1140 N. Dear-
born St., Chicago, Ill.

AMERICAN HISTORICAL ASSN., 740 15th
St., N.W., Washington, D.C.

AMERICAN POLITICAL SCIENCE ASSN.,
305 Harris Hall, Northwestern Uni-
versity, Evanston, Ill.

COMMERCIAL LAW LEAGUE OF AMERICA,
111 W. Monroe St., Chicago, Ill.

HONEST BALLOT ASSN., INC., 27 Wil-
liam St., New York City.

INSTITUTE OF PUBLIC ADMINISTRATION,
261 Broadway, New York City.

NATIONAL ASSN. OF LEGAL AID ORGAN-
IZATIONS, School of Law, Duke Uni-
versity, Durham, N.C.

NATIONAL CIVIL SERVICE REFORM
LEAGUE, 521 Fifth Ave., New York
City.

TOWN HALL, THE, 123 West 43rd St.,
New York City.

DIVISION IV

STATE GOVERNMENT

STATE ADMINISTRATION AND LEGISLATION

By JOANNE B. CLEGG

RESEARCH DIVISION, THE COUNCIL OF STATE GOVERNMENTS

LEGISLATIVE SESSIONS

Although bill introductions showed a slight decline from the total for 1939—the last year when most of the legislatures met in regular session—the legislators of the 43 states meeting in 1941 considered some 60,000 bills. While approximately a third of these measures were adopted, the great majority of them related to finances or administrative technicalities and can not strictly be termed “new laws.” States which met in regular session in 1941 included all except Alabama, Kentucky, Louisiana, Mississippi, and Virginia. Special sessions, up to the United States’ participation in the war, were held in Texas, Utah, and Vermont. Lawmakers were confronted chiefly with the consideration of proposals on national defense, welfare, labor, and taxation.

NATIONAL DEFENSE

One subject receiving the especial attention of all 43 legislatures was national defense and the four model laws covering sabotage, explosives control, protection of property, and state home guards.

In this field approximately 550 statutes covering a score of subjects, ranging from the establishment of defense councils to zoning, were adopted during the year. Every state now has a defense agency with 27 of them established by legislative action and the rest by order or appointment of the governor. Bills establishing a state home guard were passed in 27

states; sabotage prevention legislation was enacted in 17 states; control of explosives in 15 states; and protection of public property and close pursuit in those states where such legislation was immediately applicable and needed.

Fourteen of the 43 legislatures in session during 1941 made provision for turning educational resources of their states to national defense use. Most of these provisions dealt with specific training for defense and vocational education.

Over 20 states enacted defense housing laws authorizing local housing authorities to develop projects to assure the availability of safe and sanitary homes for persons engaged in defense work. Legislation in this field also covered the use of public property in defense. Such legislation makes it possible to sell, lease, lend, or donate property to the state or Federal Government. Pennsylvania authorized the State Department of Highways to take over bridges, viaducts and so on when essential to defense.

Although many restrictive proposals were introduced, only a few states enacted laws barring aliens from occupations. Several states adopted laws designed to remove race and color discriminations in defense industries. Laws against un-American activities were enacted by a dozen states.

Five states adopted special measures providing for soldier welfare and recreation such as the establishment and

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maintenance of recreation centers. Laws involving labor and industrial relations in defense were enacted by 18 states during 1941. Changes necessitated because of the defense program and the influx of soldiers and defense workers inspired most of the zoning and planning legislation provided by eight states.

INTERSTATE COOPERATION

The national defense program stimulated interstate cooperation throughout the country, and representatives of the Cooperation Commissions, as members of Defense Councils in many states, have contributed largely towards the development of the national defense program. Accomplishments both in the legislative and administrative fields give evidence that the work and influence of the Commissions on Interstate Cooperation have become more widespread and effective during 1941.

The Commissions continued their work in initiating plans to bring about solutions to various interstate problems by means of interstate compacts, adoption of uniform legislation within similarly situated states, and reciprocal administrative action. Specific difficulties were solved on such problems as interstate boundaries, dairy standards, liquor regulations, and motor vehicle requirements.

While concrete accomplishments in the field of interstate relationships were made during 1941 throughout the United States, the development of cooperation among the midwestern states was made particularly evident through their settlement of the milk problem. Eight states approved a reciprocal agreement covering certain aspects of the dairy industry.

CHILD WELFARE

With several new provisions for aid to dependent children, measures on adoption and the juvenile courts, more laws of assistance to minors were passed in 1941 than in several previous years. Forty-four states now take advantage of Federal funds on a matching basis for aid to dependent children, Connecticut and Illinois hav-

ing made such provisions in their recent sessions. The State-Federal Aid to Dependent Children program affords financial aid to children until they are 18 if they remain in school.

In 1941 eight states raised the maximum age for aid to 18 years as provided in the 1939 Federal Social Security Law.

Increasing the protection of adopted children, Indiana provided that both parents must consent to a child's adoption, that foster homes must be investigated, and that there must be a year's supervision of the foster home by a designated agency before final papers can be signed.

Among miscellaneous child welfare measures enacted were the following: South Dakota authorized community youth councils to make surveys of youth, coordinate leisure activities provided by various organizations, and provide activities for those who lack them. West Virginia remodeled its child welfare law extending the age limit from 16 to 18 years for boys under the charge of state welfare agencies. Rhode Island appropriated \$10,000 for a new home for malnourished children, chronic orthopedic and under-privileged cases. Maryland and Vermont set up commissions to study child welfare.

PUBLIC AID

State legislators also took steps to improve the provisions for and administration of public assistance. Grants for the various types of public assistance were revised upward in many cases. Arizona, Indiana, Oregon, and Rhode Island raised the maximum old age assistance grants from \$30 to \$40 a month, bringing to a dozen the number of states now allowing a \$40 maximum. Maximum limits for aid to the blind were increased in the same amounts for Arizona, Colorado, Iowa, Indiana, and Montana although the average monthly aid in all states is less than \$25.

Washington legislators agreed that \$40 a month pensioners should receive when necessary medical, dental, surgical, optical, hospital, and nursing

STATE ADMINISTRATION AND LEGISLATION

care as well as artificial limbs. Medical care provisions were also liberalized in Indiana, Iowa, and Maine.

Administratively, there was increased cooperation among agencies within a state and between states. Idaho granted its Department of Public Assistance authority to make reciprocal agreements with other states on welfare services and aid to residents and non-residents. Other states making provision for inter-state cooperation on public assistance matters included Connecticut, Maryland, Minnesota, Pennsylvania, and Wyoming.

The legislatures of Kansas, Minnesota, Nebraska, and North Carolina made non-profit hospital service plans permissible in 1941. These plans, making it easier for people with small incomes to provide hospitalization for themselves and their families, have now been adopted in 29 states.

Six states—Iowa, Maine, Massachusetts, Ohio, Utah, and Vermont—adopted premarital examination laws in 1941. Tennessee's law, enacted in 1940, became effective in 1941. This type of statutory protection now extends to include 23 states or about 60 per cent of the nation's population. With Nevada's 1941 adoption of a pre-natal examination law, 20 states now have this requirement.

Although the importance of birth records increased when the Social Security Act became effective in 1935, their value has been emphasized by recent rulings that defense industry employers hire only native-born Americans for certain types of work. Alabama, Indiana, Nebraska, North Dakota, Ohio, Pennsylvania, Tennessee, and Washington provided by law in 1941 that a person whose birth was not officially recorded at the time could record the information later. Delayed birth registration statutes had previously been adopted in California, Connecticut, Idaho, Illinois, Michigan, and North Carolina.

A number of laws providing for statewide retirement plans for certain groups of municipal employees were enacted in 1941. As a rule these plans provide for the protection of policemen and firemen.

LABOR

Eighteen states enacted legislation involving labor and industrial relations. Fifteen state laws were concerned with labor disputes and their mediation and 10 forbid labor discrimination by defense industries because of race, creed or color.

Wage and hour bills were introduced in 29 state legislatures and, although none were adopted, in the following five states a wage-hour bill passed one house—Connecticut, Indiana, Massachusetts, Pennsylvania, and Rhode Island.

A state labor relations board was established in Rhode Island to assure equality of bargaining power between employer and employee and to encourage collective bargaining as a means of diminishing industrial disputes. Maine, New Jersey, and North Carolina took similar action. Although most of the new laws were the result of legislative reactions to labor disputes in defense industries, they will affect labor in all industries, not only during the emergency but thereafter as well.

During the 1941 legislative year far-reaching changes were made in unemployment compensation acts. In general, these amendments increased the weekly benefits for unemployed workers, lengthened the period of compensation and liberalized the qualifications for benefits. Thus, as a result of the amendatory legislation, many more thousands of workers are protected from the hazards of unemployment. Likewise, unemployed workers in many states receive greater benefits and for a longer period of time.

TAXATION

Although 2,200 tax laws were enacted in 1941, legislation in this field showed a considerable letdown in scope and importance as compared with the legislation of the several preceding years. However, state tax revenues skyrocketed during the year. While revenues amounted to less than \$2,000,000,000 in 1931, by 1941 they had increased to \$3,250,000,000.

State legislators repealed some

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taxes and reduced others. However, most of the temporary tax legislation of 1939 and 1940 was continued in force. Repealed taxes include the per capita road tax in Arkansas, the poll tax in Florida, and the oleomargarine tax in New Mexico. (For details of state taxes, see "State Finances," p. 215; "Corporation and Bank Taxes," p. 240.)

Administrative changes in tax machinery were made in two states. Colorado created a Department of Taxation and Revenue having two main divisions—the Department of Taxation and the Department of Revenue. The Department of Taxation has charge of administering the taxing laws of the state and determining the amount of taxes due under the laws, and the Department of Revenue has charge of the tax collection functions.

Other states provided various modifications in assessment and collection procedures. Nine new laws made delinquent tax collections more flexible and five states passed laws permitting installment payment of taxes.

Many states waived taxation regulations for service men. Most common provisions include exemption from payment of auto license taxes or registration fees, homestead exemption, deferment of income, or property tax payments. Arkansas, Maryland, Minnesota and Wyoming granted exemptions to non-resident trainees operating cars; while North Dakota allowed this privilege provided the service man's home state reciprocates. Homestead exemption acts were amended this year to include clauses for men called into military service in Iowa, Michigan and Minnesota.

MOTOR VEHICLES

Michigan increased the fee for an operator's license from \$1.00 to \$1.25, and Oklahoma enacted a new motor vehicle excise tax of two per cent. States progressed toward uniformity of motor vehicle size and weight limits as well as uniform lighting equipment provisions. Texas abolished its 7,000 pound load limit and now allows a maximum gross regulation

of 38,000 pounds. The Tennessee gross weight limit for motor vehicles was raised from 24,000 to 30,000 pounds.

HOUSING

A bill adopted in New York in 1941 was the first state legislation to facilitate a broad program for the redevelopment of blighted urban neighborhoods. In general, the New York act seeks to induce private enterprise to engage in the rehabilitation of blighted urban neighborhoods by offering special inducements and at the same time restricting their activity to assure its being in the public interest. The Neighborhood Redevelopment Act adopted later in the year in Illinois has in general the same objectives as the New York act. Michigan adopted an Urban Redevelopment Corporations Law with provisions similar to those of the New York act, but it applies only to the City of Detroit. Urban redevelopment legislation was introduced in both the California and Utah legislatures, but it was not adopted in either state.

FISCAL LEGISLATION

In accordance with a plan adopted by the Massachusetts lawmakers in 1941, that state became the 29th within the last ten years to place its budget under control of an allotment system of state budgeting which provides for greater control over spending and brings about frequent rechecking of spending trends. The system provides for distribution of appropriations over months or quarters of a fiscal year to prevent exhaustion of appropriations before the end of a year.

Idaho transferred and consolidated the administration and collection of many of its revenues. Indiana created a State Board of Finance composed of the Governor, State Auditor, and State Treasurer. The Board supervises all the public funds and all the fiscal affairs of the state. Indiana also abolished the State Board of Tax Commissioners and supplemented in its place the Indiana Tax Board composed of the Governor, Lieutenant-

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Governor, and Treasurer for a period of four years.

INTERSTATE TRADE BARRIERS

Legislative action in 1941 centered around rejection of trade barrier proposals rather than the removal of previously enacted statutes, and was aimed chiefly at eliminating discriminatory legislation concerning local preference, oleomargarine, liquor, taxation, and trucking. A few bills of this type which did receive approval of the legislators were vetoed by governors in furtherance of the fight against interstate trade barriers.

Proposed local preference legislation was defeated in Illinois, Kansas, Minnesota, Nebraska, New York, and Oregon. Oleomargarine tax legislation was defeated in Indiana, Iowa, Mississippi, Oklahoma, Tennessee, and Washington. Interstate trade barrier legislation in the alcoholic beverage field was defeated in California, Illinois, and Oregon.

A dozen states moved to eliminate barriers in the interstate trucking field by increasing weight and load limits and so forth. Idaho and Utah adopted a reciprocal trucking agreement as did Massachusetts and New Jersey. The Supreme Court of Illinois held unconstitutional a law adopted in 1939 requiring payment of a \$25 investigation fee to grant title for used cars bought outside the state.

The Indiana legislature defeated a bill authorizing communities to col-

lect license fees from non-resident and foreign corporations doing business in the towns of the state.

MISCELLANEOUS

Approximately thirty public hearings have been held in the Great Lakes area during 1941 to further the preservation and development of the nation's fisheries. The Atlantic Marine Fisheries Compact to handle the many interstate fishery problems in that area has been ratified by Delaware, Maryland, Massachusetts, New Hampshire, New Jersey, New York, and Rhode Island.

Uniform legislation aimed to facilitate interstate administration in various fields was sponsored in the different state legislatures by the National Conference of Commissioners on Uniform State Laws. In all, 71 of these laws were adopted.

Special sessions were called at the end of the year to consider legislation to strengthen the laws against sabotage, subversive activities, treason, and for safeguarding the public health for the duration of the war.

As national defense was the main consideration of lawmakers during 1941, 1942 will see such legislation fully adopted and enforced in all of the states and wartime legislation adopted by the seven states meeting in regular session as well as by some of the "odd-year" states who will hold special sessions to effectuate the necessary protective legislation.

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By FREDERICK L. ZIMMERMANN

NEW YORK JOINT LEGISLATIVE COMMITTEE ON INTERSTATE COOPERATION

FEDERAL-STATE RELATIONS

There was closer cooperation among the states during 1941 than in any year since the American union was founded. The movement for interstate cooperation experienced a year of striking success. The long years of effort in building the machinery known as the Council of State Gov-

ernments are beginning to be rewarded with accomplishment.

However, the growing national emergency resulting in the effort for national defense and culminating in war, has changed the environment in which this cooperative movement was emerging. Exactly what the effect may be on the cooperative movement

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among the states is not yet known, but in a federalism at war there are very real changes in the normal relationships between the central government and the states. Again, while it is difficult to predict the nature and final effects of these new relationships, it is certain that during this period more emphasis will be placed on the relationships of the states to the central government since the nation's war effort will mean the channeling of the efforts of all levels of government to the single end of the success of that effort. In the confusion, clamor, and haste of a war it is difficult in an article of this length, to note and evaluate properly all the significant developments in Federal-state relations, yet it is essential that some attempt be made to remark upon some of these developments, even if conclusions concerning them must remain for the future to disclose more fully.

NATIONAL DEFENSE

The outstanding developments during the year were those relating to the role of the states in the effort for national defense. There are, however, differences in the situation in this respect in this war and that existing at the time of the last war. The environment within the Federal system itself has changed. The last war marked the intensification, if not the beginning, of the trend toward centralization that has marked the past two decades. The present crisis finds the functions of the Federal Government widely expanded beyond those it performed at that time. Moreover, the depression brought a new development—building of direct relationships between the National Government and the municipalities and local governments. Since the outbreak of the first World War, the relative place of the states in the Federal system has changed.

LEADERSHIP OF THE COUNCIL OF STATE GOVERNMENTS

On the other hand, the states have developed since 1935 an organization—Council of State Governments—to

help them perform their functions in our Federal system more effectively. It is of the greatest significance that the Council has taken the lead in coordinating the states with the National Government in the effort for national defense. In the very formulation of the defense effort itself, the Council assisted the National Defense Advisory Commission in establishing a program and in developing ways and means for Federal-state co-operation in defense. Under its leadership, the states have done a notable job in carrying out their part in the national effort.

STATE COUNCILS OF DEFENSE

Machinery has been established in all the states to coordinate their efforts with the national program. The pattern of the last war was followed by creating state councils of defense. There has been some feeling that the effectiveness of these councils of defense could have been improved if they had been made uniform in powers and pattern. Nevertheless, it would seem that the State Defense Councils have handled in an increasingly effective manner those problems growing out of the defense program that are peculiar to the states. However, probably due in part to this lack of uniformity and in part to the expansion of the Federal Government, a tendency has been evident in this emergency as in 1917 to decentralize through Federal departments and agencies instead of through the State Defense Councils, phases of defense administration that might be effectively handled by the states. Again, in this matter, it is probably too early to draw any final conclusions or to make any comparison between the relative position of state councils of defense in the last and the current crisis. On the other side, there has also been some of the same criticism of the uncertainties of Federal policy and the confusions and conflicts in dealing with the huge National Government and its many agencies, that formerly characterized the experiences of the states.

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ROLE OF CITIES IN THE NATIONAL SCENE

A development in the present emergency is notable as reflecting the larger role of cities in the national scene and is in line with the recent trend toward the development of direct relationships between municipalities and National Government. With the establishment of the Office of Civilian Defense under Mayor La Guardia of New York, there seemed to be a tendency on the part of that agency to deal directly with the cities in certain matters, thus threatening to short circuit the State Defense Councils. This was protested in a firm resolution by the Governor's Conference at the annual meeting in Boston in July. Despite assurances from the Mayor, several similar acts have since met with protest by the states, but at present the states seem in general to be securing recognition of their position and of the role of their State Defense Councils.

DEFENSE CONTRIBUTION OF THE STATES

The contribution of the states in the present defense emergency has been considerable. State organization and state machinery handled the Selective Service. Following Congressional legislation authorizing the states to maintain additional military forces while the National Guard is in Federal service, most of the states have organized state guard units. Since a model act on this subject was recommended by the Council of State Governments, a fair degree of legislative uniformity was attained. Similarly the states developed police mobilization plans for the effective maintenance of order and cooperated with the Federal agencies in the development of methods for the prevention of sabotage and subversive activities. The establishment of training schools for civilian defense activities implemented their work on the home front. In the important field of production they established training courses to equip workers for positions in defense industries and cooperated with the Office of Production Management

in promoting the fullest use of all industrial facilities for defense. The states seem to have aided particularly in mobilizing the smaller industrial establishments for that task. Similarly, the states have worked with the OPM to develop ways and means and appropriate administrative procedures for the decentralization of its activities. The states have been particularly effective in coordinating their health and welfare services with the general health and welfare plans devised by the Federal Government to meet the needs arising from industrial and military concentrations throughout the country.

LAW ENFORCEMENT LEGISLATION

Specifically, the efforts of the states in most of these endeavors have been coordinated by the Council of State Governments. It can not be too strongly emphasized that in this crisis an official organization of the state governments, as such, has played a striking role in providing leadership in Federal-state relationships in defense activities. The Council's leadership can be traced in specific actions in the field of defense efforts.

Probably the initial cooperative step taken by the states in national defense was in the law enforcement field. Following the Federal-State Conference on Law Enforcement of National Defense initiated by the Council in August, 1940, six model laws were prepared and submitted to the state legislatures meeting in 1941. These covered the subjects of state councils of defense, state guard organization, "fresh pursuit" by military forces across state lines, sabotage prevention, control of explosives and interstate public property protection. All the states established councils of defense. The model State Guard Act was adopted by 27 states, while other states established guards by other methods. The "fresh pursuit" provisions, providing for use of state guard forces outside the state under certain circumstances, was adopted by 21 states. The model act for the control of explosives was adopted by 13 states.

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While only California, Maryland, and Utah adopted the model bill on protection of interstate public property which permits states with public property in other states to arrange for its protection by the states in which the land is located, these were the principal states that had such property. Despite vigorous opposition caused by suspicion on the part of organized labor, 16 states adopted the Sabotage Prevention Act. In New York, where the opposition was very strong, the law finally enacted is working satisfactorily to all concerned.

STATE PROGRAMS OF WAR LEGISLATION

Following this action by the legislative sessions of 1941, regional defense conferences of state commissions on interstate cooperation have initiated, and a defense drafting committee of the Council has prepared, an additional program of war legislation. The new measures comprise suggested bills for state enactment on air raid precautions, mobilization for fire defense, military traffic control, emergency health and sanitation regulations, acceptance of Federal grants, and defense housing and zoning. The latter two are of particular interest. The proposed bill on acceptance of Federal grants would give broad authority to the state and its agencies to accept Federal grants for defense purposes. The bill providing for defense housing makes it possible for local public housing agencies to be utilized by the Federal Government to provide necessary defense housing. Some states have already enacted such legislation which is predicated on previous Congressional legislation, making available financial assistance for this purpose.

The legislative program of the Council, of course, does not exhaust state legislation relating to national defense. A variety of defense measures have been enacted by the various states. It is estimated that during the year, the state legislatures enacted about 550 statutes in the interest of defense, covering a number of subjects such as use of public property

in the defense program, housing and zoning, defense airports, labor and industrial relations, protection of employment of those in military service and in particular public employees, education for national defense, and absentee voting for those in the military. The significant fact, however, about the Council's program is that in this war the states were sufficiently organized to plan and adopt a program of principal defense measures.

DEFENSE INDUSTRIAL MEASURES

On the administrative side, the Council, at the suggestion of the Office of Production Management, established a Committee on Production which worked with OPM in devising more effective methods for subcontracting and spreading the work to small industry. They also sought to ease the impact of priorities upon state and local agencies and to reconcile suitable allocations for necessary governmental functions with the strictures of a war economy. In addition, the OPM conducted a school for state and local purchasing agents and expanded its Division of Contract Distribution by establishing offices in every state. State defense councils aided by appointing committees or officials to concentrate upon production problems and to work directly with the defense contract branch of OPM.

DEFENSE HEALTH AND WELFARE

At the request of the Office of Defense Health and Welfare, the Council formed a special committee to coordinate the state and local administrative agencies in these fields with the needs of national defense. The defense councils of all the states established machinery to cooperate on these problems. Problems of congestion and recreation are thus being handled effectively.

LOCAL DEFENSE MEASURES

Of course, state defense councils have also engaged in solving problems peculiar to their areas which, while

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of great local importance for defense, are not part of a nationwide program. The Council has in all these defense activities of the state councils acted as an information service and as a liaison agency between the Federal Government and the states and among the states themselves. The degree to which it has been depended upon by the various Federal defense agencies is eloquent testimony to the importance of its work. The amount of work involved has now compelled the Council to open an office in Washington. The Tax Committee of the Council recommended to the states and local governments that fiscal policies conform with the broad objectives of the war period by avoiding operations which may compete with national defense for labor, materials, or equipment, by harmonizing their tax levies with the efforts to control production and prices, and by adjusting their programs to build up reserves either through accumulation or debt retirement for a program of public works to cushion post-war readjustment.

DEVELOPMENT OF INTERSTATE COOPERATION

The year has been the most successful in the history of the movement for interstate cooperation. Establishment of the machinery through the Council of State Governments and the state commissions on interstate cooperation provided the foundation. These state commissions, now established in 44 states, are the official negotiating agencies of their respective states in Federal-state and interstate relations, representative of both houses of the legislature and of the executive branch, thus assuring integration within the state government in its negotiations with other governments. The rapid extension of their activities and the increasing effectiveness of their operations were the primary factors in the successful record of interstate cooperation in 1941. That effectiveness is spreading from the northeast to other sections of the country. During the 1941 legislative sessions, equipment of the sev-

eral states with statutory machinery for interstate cooperation continued. Permanent statutory commissions replaced temporary commissions established by resolution in Iowa, Kansas, and Michigan. Notable progress was made in the organization of hitherto unorganized commissions, especially by Louisiana, Minnesota, Montana, and Wyoming. One important milestone was the California Court decision concerning the constitutionality of the California Commission on Interstate Cooperation in which the court held this type of agency legal, particularly as regards separation of powers within the state government and the question of dual office holding by state legislators and administrative officials. In short, the influence and work of the Commissions on Interstate Cooperation have steadily grown more effective. In the current crisis many of them are serving as the legislative arm of the state defense councils.

As a concomitant of increasing activity and growing success, the states in increasing numbers are equipping their cooperation commissions with larger funds to operate effectively and are assuming a greater part in the management and financial support of the Council of State Governments. Of the four states—Arizona, North Dakota, Idaho, and Washington—which have not yet established Commissions on Interstate Cooperation, Arizona and Washington cooperate with the movement through the governor's office and Arizona appropriates to the Council. The Council, which was originally conceived as an interstate legislative reference service, has continued to act as the secretariat not only of the Commissions on Interstate Cooperation, but of its affiliated organizations—Governors' Conference, National Association of Attorneys-General, National Association of Secretaries of State, and American Legislators Association. It should be noted, in this connection, that the Council is increasingly operating through the governors in addition to the cooperation commissions, particularly in the south and west. In

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fact, one of the most significant recent factors in the growth of the co-operative movement has been the increasing part being played by the governors.

UNIFORM STATE LAWS

In 1940 the National Conference of Commissioners on Uniform State Laws joined its efforts with those of the Council. Although close relations between the two groups had existed all during the Council's history, that relationship was now implemented by an agreement that the Council would place in the hands of the state cooperation commissions a selected group of the proposed uniform laws prepared by the National Conference. The Conference, since it was founded in 1891, has been very effective in the drafting of uniform laws. It has been much less successful in securing the enactment of its model measures by the states due to the lack of any organic relationship of the Commissioners to the governments of the states. The Commissions on Interstate Cooperation, on the other hand, as official agencies of the states with legislative and administrative members, provide the necessary organic relationship and have in consequence been effective in securing the adoption of their recommendations. This was strikingly illustrated by their success with the selected group of uniform laws during the 1941 legislative sessions. In the 44 regular sessions, there were 208 introductions of the uniform proposals of the Commissions of which 78 were adopted, whereas in 1939, the previous legislative year, 122 were introduced and 36 adopted. This is a high spot in the history of the adoption of uniform laws by the state legislatures.

INTERSTATE TRADE BARRIERS

The Council of State Governments continued its successful campaign against state trade barriers. Since the 1939 National Conference on Interstate Trade Barriers called by the Council, the further growth of new state trade barriers has been effectively checked through the efforts of

the state cooperation commissions. While the repeal of existing discriminatory state laws has obviously been more difficult, progress has also been made in this direction. Notable further achievements were made during the year, aided in part by the additional leverage of the national defense need for the free flow of goods. The 1941 legislative sessions again refused to enact numerous barrier proposals. On the other hand, they repealed many previous enactments. At the instance of the cooperation commissions, purchase preference bills were killed in Illinois, Kansas, Minnesota, and Nebraska. Governor Sprague of Oregon vetoed a bill of this type in addition to five other bills he thought might operate as trade barriers. The Arkansas commission successfully opposed the adoption of a discriminatory tax on vendors of horticultural and agricultural products.

In one of the most pressure plagued fields, that of certain domestic oils—cottonseed, peanut, and soybean oils—surprising progress has been made. The Commissions on Interstate Cooperation of Mississippi and Tennessee secured the repeal of discriminatory oleomargarine taxes in those states, while the State of Washington took similar action on the request of the cooperation commissions of several southern states. The Council has held two conferences on specific questions relating to oleomargarine.

A well organized attack on other trade barriers in the agricultural field was initiated when the Council, in response to a request for action by the Western Plant Board, suggested that, since seed and plant inspections were technical in nature, the four regional Plant Boards designate one member each to serve as an Advisory Committee of Technicians on Interstate Trade Barrier Problems. This Committee has been of great help in analyzing so-called barrier laws and regulations.

Much of the year's attack on trade barriers centered on administrative regulations as well as statutory enactments. The New England states

reached agreement on reciprocal acceptance of certificates as to the freedom from Bang's disease of dairy cattle. After long negotiation, the Cooperation Commissions of nine mid-western states completed the drafting of a reciprocal interstate agreement in respect to the controversial subject of milk inspection. This has been officially approved in Kentucky, Illinois, Indiana, Iowa, Michigan, Minnesota, Ohio, Tennessee, and Wisconsin. It provides for acceptance of agreed uniform standards and acceptance by each state of certificates of inspection and rating from the other states of the group. Not only was this an achievement in itself, but as a result of this cooperative effort there has been new impetus towards raising the standards in this area.

In another difficult barrier field, that of liquor, some new results can be recorded. Kentucky, California, Oregon and Illinois all acted to prevent new liquor barrier laws. New York and New Jersey satisfied a complaint of Pennsylvania. Regional meetings on liquor problems in the midwest during the year helped in mitigating the trade barrier problem there.

The Federal Government's Interdepartmental Committee on Interstate Trade Barriers continued to refer complaints to the Council of State Governments for examination and solution. During 1941, there were further proposals in more concrete form for direct Federal action. In the case of motor truck transport this took definite shape in legislation. More broadly, Thurman Arnold, Assistant Attorney General, suggested to the Temporary National Economic Committee, in the course of its hearings on state trade barriers, that the Federal Trade Commission be given the duty of making findings of fact as to whether state and local statutes restrain commerce and that such findings be *prima facie* evidence in injunction proceedings in the Federal courts. However, it must be said that the principal initiative and practically all the results in the trade barrier question still come from the states.

STATE BOUNDARY ADJUSTMENTS

It is interesting that disputes over state boundaries, the earliest field for interstate agreements, should provide modern examples but surveyors make errors and rivers shift their beds. After two years of effort by the Commissions on Interstate Cooperation and the Council, the governors of Kentucky and Indiana have appointed official Commissioners to secure settlement of the Indiana-Kentucky boundary dispute. Similarly, discussions concerning the Illinois-Indiana boundary line question were carried on during the year. A boundary line never drawn between New York and Rhode Island has now been agreed upon, following action by the cooperation Commissions of both states in securing the creation of a boundary commission.

INTERSTATE RIVER BASINS

In the closely allied problem of interstate river basins, progress has been mixed. The Interstate Commission on the Delaware River Basin continued to make progress in the problems of the Delaware basin. The Pollution Act previously passed by New York and New Jersey was enacted in Delaware, but defeated by the Pennsylvania Senate. However, the administrative sanitation agreement among the four states establishing water standards for the river continued in force and proved an effective device. Agreement was reached on the difficult problem of allocation of the river's water supply and will be embodied in legislation. The Commission also made much progress in handling planning problems and recreational development of the basin and in efforts to secure the construction of sewage-treatment works by Philadelphia.

While the legislature of New Jersey has not yet enacted legislation to enable some of the financially pressed Jersey communities bordering on the Hudson and New York Harbor to erect sewage treatment plants, continued progress was made by the Interstate Sanitation Commission in

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the cleaning up of New York Harbor and adjacent waters. At the instance of the Connecticut Cooperation Commission, that State in 1941 joined New York and New Jersey as a party to this Interstate Sanitation Compact.

The Potomac River Basin Sanitation Compact, initiated by the Council of State Governments, was ratified by Congress and by Maryland, Virginia, and West Virginia. Congress, through the District of Columbia, and the member states have all made appropriations so that, like the Interstate Commission on the Delaware River Basin, this Commission has been taken over by the member states on a self-supporting basis. Pennsylvania failed to ratify the Potomac Compact in the 1941 session, which held up final ratification of the Ohio River Basin Sanitation Compact since, while Illinois, Indiana, Ohio, Kentucky, New York, and West Virginia have ratified, some of them made their acceptance contingent upon that of Pennsylvania.

FISHERIES

The fisheries field showed some outstanding successes for interstate cooperation. An important step for the conservation and better utilization of the littoral fisheries of the Atlantic Coast was taken when New Hampshire, Massachusetts, Rhode Island, New York, New Jersey, Delaware, and Maryland ratified the Atlantic States Marine Fisheries Compact which established the Atlantic Marine Fisheries Commission, comprised of three representatives from each state. This body will recommend measures for the preservation of the fisheries to the governments of the cooperating states. Its importance is that it will provide an official interstate coordinating body and an official channel for recommendations to the several states. It is significant that the primary research agency for the Commission is the Fish and Wildlife Service of the U. S. Department of the Interior. This important accomplishment was initiated and carried through over a period of four years

by the Commissions on Interstate Cooperation of the 14 Atlantic seaboard states.

The International Board of Inquiry on the Great Lakes Fisheries, a body created by the United States and Canada following initiation of the project by the states through the Council of State Governments, held a series of important hearings during the year and is now preparing its report.

New York and New Jersey, through the passage of agreed legislation in the sessions of 1941, have reached a solution on the preservation of the revived shad fishery of the Hudson after long negotiations by the cooperation commissions of both states. While the Vermont legislature failed to pass agreed legislation for the preservation of the fisheries of Lake Champlain, similar to legislation for that purpose passed by New York, negotiations will undoubtedly be renewed. Efforts to reach agreement as to other fishery problems, notably as between Virginia and Maryland and between New Jersey and Delaware, continue. Moreover, the cooperative effort for the Atlantic States Fisheries Compact has resulted in the adoption of much more adequate protection for lobster and striped bass by the northeastern states through their Commissions on Interstate Cooperation.

HIGHWAYS AND MOTOR VEHICLES

The trade barrier campaign, the national emergency, the threat of Federal legislation, and the increasing strength of the movement for interstate cooperation have all contributed to progress by the states in the lessening of variations in regard to truck weights and dimensions, the most difficult and most important problem in the motor vehicle field. The Northeastern Highway Safety Conference, comprised of the northeastern states' cooperation commissions, continued its efforts to establish more uniform truck size and weight regulations in that area and seems to be making effective progress towards securing a

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flooring in maximum state limits after its earlier more ambitious program, setting both a ceiling and a flooring failed in large part at the legislative sessions of 1941.

At the same time, legislation is pending in Congress to extend the jurisdiction of the Interstate Commerce Commission by granting it authority to lift state motor truck regulations where they are deemed to operate as a burden on interstate commerce. Opposition on the part of the states highlights the clash here between Federal primacy with respect to commerce and state ownership of the roads, plus variations in state financial ability to build and maintain them. The whole question, of course, is agitated by an interplay of economic pressures.

Nevertheless, during 1941, much discriminatory motor vehicle legislation was halted by various state cooperation commissions while, on the other hand, some constructive legislation was enacted, aimed at eliminating existing barriers. Outstanding barriers were removed at the instance of the cooperation commissions in Tennessee and Texas, and adjustments were made in a number of less flagrant cases in other states. Meanwhile, in the National Government, emphasis was laid on strategic roads in connection with Federal grants-in-aid, and a provision was enacted that the Federal Government meet 75% and the state 25% of the cost of such improvements during the war emergency. Moreover, the Administration in Washington seems to be questioning many of the features of the grant-in-aid system for highways.

SOCIAL SECURITY AND RELIEF

During the year a Special Committee on Relief of the Council and a series of regional meetings on this subject developed a comprehensive report, the main features of which emphasized state administration of all relief based on general Federal grants-in-aid with a variable basis according to the wealth of the states, ranging from grants from 50 per cent to wealthier states and up to 75 per

cent to the poorer states. Although the national emergency has temporarily postponed further action, this report may well represent a significant step toward developing an effective welfare system.

TAXATION

In regard to taxation, the states of the northeast have been working on the problem of multiple death taxation when two or more states claim domicile. A plan of reciprocal legislation has been developed under which states may voluntarily compromise their differences and pro-rate the collected taxes or, failing that, submit the question to arbitration. Despite a late start in the sessions of 1941, the model statute was enacted in full in Delaware, in part in New York and New Hampshire, and referred to the Commission on Interstate Cooperation for further study in Massachusetts.

Although long efforts on the part of the Council to secure Federal cooperation in the study and formulation of a more effective tax system, including all levels of government, never were successful in any concrete sense, the Treasury Department has now established a committee of tax experts to study this subject. However, the states are not represented as such on this committee.

INTERSTATE OIL COMPACT

During the year New York and Pennsylvania ratified the Interstate Oil Compact, thus joining with Oklahoma, Texas, Kansas, Colorado, New Mexico, Illinois, Michigan, Arkansas, and Louisiana. Congress renewed its authorization of that compact for another two-year period following a message from the President praising this effort by 11 states.

CONCLUSION

What has been said in this review is sufficient to indicate to some degree the magnitude of the achievements of the movement for interstate cooperation. What the effect of the war will be on this movement and upon our Federal system is for the future to

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disclose. It seems certain, however, that, in view of the activities of the states in the national defense effort, the movement for interstate and interlevel cooperation will play an important part in federalism at war as it has played a successful role in the federalism of peace.

CONSTITUTIONAL AMENDMENTS, REFERENDA AND INITIATIVES

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GENERAL

The voters of only seven states were asked to pass upon questions submitted to them during the year 1941. Not since 1925, when there were only four states, have there been fewer states represented. The total number of proposals submitted was 83, all of them constitutional amendments proposed by legislatures, except for a statute referred to the voters by petition in Maine. Only two proposed amendments were defeated, one in Georgia and one in New York, both pertaining to the legislatures. The referendum on an act to increase the present four-cent tax on gasoline appeared, by unofficial returns, to have been defeated decisively.

Georgia confronted the voters with a list of 70 proposed amendments, 62, however, being proposed only to authorize specific local units to exceed constitutional tax and bond limits or to make other financial arrangements, and need not be considered further. The other states represented were New York (four amendments), Oklahoma (three), Kentucky and Michigan (two each), Wisconsin (one), and Maine (referendum vote).

Election dates were widely scattered through the year as usual. Only two states submitted questions on the traditional November date, New York and Kentucky, and only two others, Pennsylvania and Virginia, had statewide balloting on that day. Questions were submitted at regular elections

in Wisconsin, April 1; Michigan, April 7; and Georgia, June 3. Special elections were held in Oklahoma on March 11 and in Maine on Dec. 10.

GOVERNMENTAL STRUCTURE AND POWERS

Executive. — Georgia, by two amendments, increased the term of the governor and other constitutional officers to four years. The longer term also was applied to the secretary of state, comptroller, and treasurer. Another proposal adopted fixed the term of the state superintendent of schools which formerly was identical with that of the governor. A further amendment provided for advertising and promoting the resources and facilities of the state.

One of the Oklahoma amendments provided for the reorganization of the control of state institutions of higher education. The Oklahoma State Regents of Higher Education, consisting of nine members, was created and was given control of the 17 institutions supported wholly or in part by the state. The new board supercedes an extensive array of governing boards for the separate schools, and a coordinating board created in 1933. Provisions also were included whereby other institutions of higher learning in the state may be coordinated with the state system under regulations formulated by the new board of regents.

Legislative.—The only amend-

CONSTITUTIONAL AMENDMENTS, REFERENDA, INITIATIVES

ments rejected in 1941 pertained to legislatures. Georgia refused to abandon the biennial 60-day session adopted in 1939, rejecting a proposal for an annual 50-day session. New York voters refused to accept a proposal to increase the terms of senators elected in 1942 to four years. Legislative powers, however, were extended in a few instances. Kentucky authorized the legislature to distribute ten per cent of the state school fund on a basis other than pupil census as previously required by the Constitution. The Kentucky legislature also was authorized to enact laws under which counties might install voting machines.

In New York, the legislature was permitted to provide for the use of funds derived from the sale of bonds for grade-crossing eliminations for the construction and reconstruction of state highways and parkways, to the extent of \$60,000,000. The Wisconsin legislature was permitted to enact statutes empowering cities, villages, and towns to collect and return real estate taxes by optional methods including installment payments.

Judicial.—The only proposal affecting the courts was an amendment adopted in Georgia increasing the civil jurisdiction of justice courts about the \$100 limit previously contained in the constitution.

TAXATION AND FINANCE

The outstanding finance amendment of the year was that adopted in Oklahoma which was designed to insure a balanced budget. The legislature is forbidden to appropriate funds except on the basis of an estimate of revenues by the Board of Equalization which may not exceed the average revenues for the three preceding fiscal years, although it is permitted to enact laws for additional revenues from other than *ad valorem* tax sources. That part of all appropriations in excess of revenues at the end of the fiscal year becomes null and void, the reductions being made *pro rata* to each expending agency. In order to make the limitations effective a periodic allotment of funds to each

agency is provided, and warrants in excess of the allotment are forbidden. Obligations outstanding on July 1, 1941 could be refunded, but thereafter obligations in excess of revenues can be paid only after the issue of deficiency certificates by the governor, the total of which can not exceed \$500,000 in any fiscal year. Following the adoption of the amendment, the legislature enacted laws to put the provisions into effect for the new fiscal year beginning July 1, 1941.

There were only three tax measures during the year. Wisconsin, as mentioned in the section on the legislature, permitted empowering local tax collecting agencies to use installment collection methods. Georgia exempted from all taxation cooperative, non-profit, membership corporations organized under the laws of the state for the purpose of engaging in rural electrification. As mentioned earlier, the referendum in Maine resulted in the rejection of an act to increase the gasoline tax above four cents per gallon.

ELECTORAL MATTERS

Constitutional provisions in Michigan relating to the procedure and requirements for the use of the initiative for constitutional amendments and the initiative and referendum for statutes were revised. The principal changes were the additional requirement that petition signers be registered voters as well as otherwise qualified, and authority conferred upon the secretary of state to determine the validity of signatures upon petitions, his findings as to sufficiency and validity to be declared at least two months before the election. Significant also is the substitution of a ballot summary of not more than 100 words for the printing of the full text of the proposal on the ballot required previously.

In New York, the provision relating to constitutional amendments was supplemented to the effect that the failure of the attorney-general to submit a written opinion on a proposed amendment should not affect its validity. The amendment article re-

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quires the legislature to submit proposals for amendments to the attorney-general for a written opinion on the effect of the proposal on the other parts of the constitution.

MISCELLANEOUS

Oklahoma voters approved an amendment the most important result of which was to rescind the previous limitation prescribing that no needy or aged person could receive assistance which, added to his income from other sources, would exceed \$30 per month. Cooperation with assistance programs of the national government was specifically authorized. A comparatively minor amendment in New York permits the state to construct ski trails in the forest preserves on White Face Mountain. Georgia counties and cities were authorized to

contract with each other and with other public agencies for the hospitalization of indigent sick persons.

SUMMARY OF RESULTS IN RECENT YEARS

Table I presents the information available from the annual summaries in *THE AMERICAN YEAR BOOK* for the 12 years, 1930 to 1941, inclusive. Because of variations in reporting, it has been necessary to summarize in the broad categories of "Amendments" and "Initiatives and Referenda." It seems, from the table, that constitutional questions as a group have had more favorable consideration from the voters than have the initiated and referred statutes. The categories are too broad, however, to support any far-reaching conclusions.

TABLE I
STATE-WIDE QUESTIONS VOTED UPON 1930-1941

Year	No. States	Total No. Proposals		Amendments		Initiatives and Referenda	
		App.	Rej.	App.	Rej.	App.	Rej.
1930.....	38	105	99	80	81	13	28
1931.....	8	8	13	5	10	3	3
1932.....	39	118	102	80	57	27	32
1933.....	15	52	26	41	15	11	11
1934.....	36	91	62	68	45	23	17
1935.....	12	36	28	25	13	11	15
1936.....	31	119	65	108	55	11	10
1937.....	7	37	15	36	13	1	2
1938.....	33	116	90	92	53	24	37
1939.....	12	46	15	44	6	2	6
1940.....	33	91	98	76	73	15	24
1941.....	7	80	3	80	2	0	1
Total.....	—	899	616	735	423	141	186
Percent.....	—	59.3	40.7	61.4	38.6	43.1	56.9

More extensive analysis of results has been possible from the material available for 1935-1941 inclusive, presented in Table II. Amendments have been divided according to the manner of proposal, revealing that 72.5 per cent of those submitted by legislatures were approved by the voters, while only a little over 34 per cent of those initiated by petition have been adopted. This result is inflated somewhat by the large number of Georgia amendments affecting spe-

cific local units. Convention proposal has resulted in the adoption of slightly over half (53.9%) of the amendments presented to popular vote by this means. Statutes initiated during this period suffered a fate similar to initiated amendments, only 35 per cent being adopted. Unfortunately it has not been possible to separate referenda by legislature from referenda by petition so that conclusions as to the relative success of these measures at the polls cannot be

ELECTORAL LEGISLATION

reported. It may be significant that | to referenda were rejected by the
58 per cent of the statutes submitted | voters.

TABLE II

STATE-WIDE QUESTIONS, 1935-1941, BY PROPOSAL METHOD

	1935	1936	1937	1938	1939	1940	1941	Totals	
								No.	%
Number States Voting.....	12	31	7	33	12	33	7	—	—
Number Propositions:.....	64	184	52	206	61	189	83	839	—
Approved.....	36	119	37	116	46	91	80	525	62.5
Rejected.....	28	65	15	90	15	98	3	314	37.5
<i>Constitutional Amendments</i>									
Proposed by Legislature..	36	147	49	115	46	125	82	600	—
Approved.....	23	102	36	83	43	68	80	435	72.5
Rejected.....	13	45	13	32	3	57	2	165	27.5
Proposed by Initiative...	2	16	0	30	4	24	0	76	—
Approved.....	2	6	0	9	1	8	0	26	34.3
Rejected.....	0	10	0	21	3	16	0	50	65.7
Proposed by Convention..	0	0	0	13	0	0	0	13	—
Approved.....	0	0	0	7	0	0	0	7	53.9
Rejected.....	0	0	0	6	0	0	0	6	46.1
<i>Initiated Statutes.....</i>	1	10	0	24	3	22	0	60	—
Approved.....	1	5	0	10	0	5	0	21	35.0
Rejected.....	0	5	0	14	3	17	0	39	65.0
<i>Referred Statutes.....</i>	25	11	3	24	5	17	1	86	—
Approved.....	10	6	1	7	2	10	0	36	42.0
Rejected.....	15	5	2	17	3	7	1	50	58.0

It will be noted that constitutional amendments constituted the bulk of the questions submitted to popular vote, and that the preponderance of these amendments were legislative proposals. Only a comparatively small number of states have made initia-

tive and referendum procedures available. Yet, the chance of approval by the voters appears to be much greater in the case of proposals which have had legislative consideration than for those which have been initiated.

ELECTORAL LEGISLATION

By O. DOUGLAS WEEKS

PROFESSOR, THE UNIVERSITY OF TEXAS

GENERAL

The legislatures of 42 states enacted electoral legislation during 1941. Plans were made by three of these states for codification or comprehensive revision of their election laws; commissions were created for this purpose in Illinois and New Hampshire; Washington entrusted the task to the Attorney General. Rhode Island authorized the State Board of Elections to report legislative recommendations as to the appointment and training of election officials and the correction of voters' lists.

NOMINATIONS

A variety of detailed changes in requirements governing nomination petitions and filing for candidacy were enacted in eight states—Colorado, Indiana, Massachusetts, Michigan, New Hampshire, New York, West Virginia, and Wisconsin. Michigan repealed the requirement, affecting counties of over 500,000 population, of deposits by candidates which were to be forfeited for failure to secure 50 per cent of the total vote of the winning candidate in a given primary race. New provisions for filling vacancies in candidacies for

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the primary or general election were made in Colorado, Connecticut, and Illinois. Party primary nominations were provided in Florida for certain appointive judges and for county solicitors and states attorneys. Conventions and caucuses in Illinois and caucuses in Washington were revived for certain local nominations; city primaries may now be dispensed with in Wisconsin in commission-governed municipalities. Non-contested non-partisan races were eliminated from the primary in Michigan; non-partisan nomination and election of county school board members were established in West Virginia.

Post-primary conventions in Iowa were forbidden to make a nomination for an office for which no candidate received in the primary as much as 5 per cent of the party's total vote for governor in state or district. Arkansas renewed her peculiar double primary system for 1942; Texas required a run-off for tied candidates. Georgia provided for recounts in primaries; Maine and Texas amended their canvass and recount procedures. Change of venue in contested primary races is now possible in Illinois, and in Texas, party executive committees were deprived of concurrent jurisdiction in contests, and judicial procedure in such cases was accelerated. The names of candidates for national convention delegates are to be omitted from the presidential primary ballot in California; a vote for a preference on the ballot is a vote for a group of candidates pledged to that preference.

PARTY ORGANIZATION

Arkansas, California, and Indiana strengthened their laws barring subversive parties and groups from the ballot, and nine additional states—Illinois, Kansas, Ohio, Oklahoma, Oregon, Pennsylvania, Texas, Wisconsin, and Wyoming—enacted similar legislation. Most of these laws specify only the Communist party by name; Illinois and Texas add the Fascist and Nazi parties, but the laws are directed against all subversive parties or po-

litical groups affiliated with foreign parties or governments and advocating the use of revolution, sabotage, violence, sedition, treason, etc. Recognition of party status and participation in primary and/or general election are denied. Ohio and Indiana require affidavits of all parties that they are not of this type; Texas exacts an oath of all candidates; the Oregon law applies to candidates. A new party can participate in the primary in California if 2,500 voters declare their intention to affiliate with it prior to the last preceding primary election.

Delegates to state party conventions in Massachusetts are to be chosen by ward and town committees rather than as heretofore in primaries. Florida extended the terms of party committees from two to four years and allowed state executive committees of minority parties to choose national committeemen and national convention delegates or to provide for their election in primaries. Women were admitted to state committees in Oregon and South Dakota. Minor organization changes were effected in California, Illinois, Michigan, South Dakota, and Tennessee.

CONDUCT OF ELECTIONS

Laws extending absent voting to electors in the armed forces of the United States were enacted in 11 states, and the absent voting laws of several additional states were liberalized or simplified as to procedure. Oregon made changes in her voters' pamphlet provisions and authorized the Secretary of State to delete improper material from initiative and referendum pamphlets. Florida substituted the party-column for the office-block ballot. Idaho dispensed with voting squares for presidential electors and provided a single circle for each electoral ticket. Nevada provided voting squares in lieu of the use of margins for marking and required marks to be made by the names of candidates for President and Vice-president rather than by those for

electors. New Jersey repealed her provision for split voting on presidential electoral tickets. Connecticut provided a straight-ticket section on the ballot in place of a circle heading each party column and dispensed with a general "yes" space for all referenda as a group. Georgia adopted the double-stub type of ballot for primaries and general elections, subject to grand jury approval in each county. Missouri required the placing of black stickers over ballot identification numbers at the time of casting, which are to be removed only in contests and grand jury investigations. Oregon provided for rotation of names on general election ballots and Massachusetts for placing names of the two major party candidates in first and second place in each office-block.

Indiana separated city from state and county elections and moved them to odd-numbered years; Oregon authorized any city to provide for separate city primary and election ballots and to adopt proportional representation in the nomination and election of city officers. Connecticut removed her ban on preferential and proportional voting in city and town elections. Certain judges in Maryland are to be elected on a non-partisan ballot. A unique Tennessee provision anticipates Congressional elimination of the poll tax voting requirement in primaries and elections involving presidential electors and United States senators and representatives. In the event of such, separate primary and general elections, election officials, and voting places are to be provided. New provisions for special elections of various types were made by Florida, Georgia, and Oklahoma.

Innumerable amendments of a detailed nature were enacted by a number of states with respect to voting precincts, polling places and hours, and election officials, supplies, and procedure. Rhode Island increased the size of her State Board of Elections and provided its members with salaries. Voting machine laws were

amended as to details in Connecticut, Illinois, Minnesota, New Jersey, New York, and Ohio. Massachusetts enacted changes made necessary by the use of voting machines. Ohio repealed her provision for optional central counts in counties over 250,000.

CORRUPT PRACTICES

Texas provisions relating to political contributions by corporations were revised mainly to produce consistency. Business concerns and corporations under public contracts, or their officers, were forbidden to make or solicit any political contributions in West Virginia, where also the solicitation or coercion of all non-elective state employees and all political contributions over \$5,000 were prohibited. Solicitation of money to induce the abandonment of the initiative and referendum and the recall was forbidden in California. Indiana prohibited political assessments from or by employees of state charitable and penal institutions and required all political contributions to be made to party treasurers or political agents. The bribery law of Illinois was strengthened by extension to the giver of a bribe and by heavier penalties. Campaign printed matter in New York must bear the names of the printer and those responsible for printing; Oregon stiffened her provisions against libel in printed matter. Nebraska repealed specific limits on campaign expenditures, but required additional items in campaign expenditure reports. Florida added to her permissible items of campaign expenditure. Minor changes were enacted in Georgia, Massachusetts, Minnesota, and North Carolina.

REGISTRATION

West Virginia adopted a uniform statewide "model" system of permanent registration; Connecticut modernized her system of permanent registration in a number of respects; and Illinois extended permanent registration to all counties under 500,000 and New Jersey to all municipalities. In Ohio, the board of elections in any

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county may establish registration. Structural and procedural changes in registration were made in 11 states, and absent registration was extended mainly to voters in the armed services in eight states. Poll tax requirements for voting were liberalized in certain cases in Arkansas and Texas.

REFERENDA AND LOCAL LEGISLATION

Constitutional amendments affecting elections were initiated and are pending in eight states: Georgia—to extend terms of state elective officers to four years, their elections to alternate in even-numbered years with presidential elections; Indiana—to provide home rule charters allowing any method of nomination, election, and recall; Michigan—to amend pro-

visions regarding initiative and referendum petitions; Missouri—to restore elective status to certain appointive judges; New Hampshire—to allow absent voting; North Dakota—to allow consolidation of counties and optional forms of county government; Oregon—to change provisions denying suffrage to convicts and the insane; and South Carolina—to substitute the poll tax for a general taxpaying requirement for voting in municipalities.

Special and local laws dealing with a wide variety of subjects affecting local elections were enacted in California, Kansas, Maine, Maryland, Massachusetts, New Mexico, North Carolina, North Dakota, Pennsylvania, South Carolina, Texas, Utah, Washington, and Wyoming.

LAW REFORM

By CLINTON ROGERS WOODRUFF
LAWYER AND WRITER, PHILADELPHIA

AMERICAN BAR ASSOCIATION MEETING

The 64th annual meeting of the American Bar Association was held in Indianapolis, Sept. 29 to Oct. 3. The attendance and sustained interest were a demonstration that the American Bar Association will continue to function actively in the presence of national crisis. Indeed, the spirit of the meeting was that the organized Bar ought to put forth redoubled efforts at such a time. Deep patriotic feeling pervaded the sessions with a high resolve that all resources and agencies of the Association should be used in behalf of national defense and the protection of the vital freedoms against inroads from abroad or from within.

Although it was not one of the largest meetings in the recent annals of the Association, the attendance was larger than had been expected. All parts of the country were represented in the registration, although naturally the concentration of attendance came

from the Middle West and the Northeast.

Perhaps the most significant aspect of the 1941 meeting was the marked interest in the Sections and in the programs of unusual quality and attractiveness which many of the Sections had arranged. Several of the Sections had not limited themselves to their usual routine of programs dealing with their specialized fields of law, but had arranged for speakers and subjects of general and popular interest, which led to the attendance of many members not ordinarily interested in the work of the Sections.

Outstanding in this respect was probably the Section of Judicial Administration, which staged a notable discussion of Administrative Law by Attorney General Francis Biddle and Dean Roscoe Pound; the Section of Real Property, Probate and Trust Law, which made distinct contributions to the week's program; the Section of Taxation, which did useful work on the new problem of law in

its field; and the Section of International and Comparative Law, which dramatized the current interest in international problems and conducted an important symposium on Hemispheric Solidarity. Other Sections had put together worth-while programs, and were rewarded with good attendance and lively interest.

BAR INTEGRATION

The Massachusetts Bar Association and the Law Society of Massachusetts have sent to all members of the Bar in that state asking for a questionnaire vote on how lawyers in Massachusetts stand with regard to Bar integration. The leaflet presents a clear factual statement about "What an Integrated Bar Is," "What an Integrated Bar Is Not," "Manner of Integration," "Reasons for Integration," "Objections to Integration," and "How Massachusetts Stands on Bar Integration." Under the last topic, there is quoted a resolution of the Massachusetts Judicial Council in 1937 and repeated in 1940 in which it is stated:

"The Supreme Judicial Court is hereby requested to provide by rules, for the organization of all present and future members of the bar of this Commonwealth, as a self-governing body subject to the constitutional authority and rules of said court, to be known as the Bar of Massachusetts. There is also given a table showing that 26 states have signed integration beginning with North Dakota in 1921 and concluding with Louisiana in 1940."

The following are the definitions in regard to an integrated bar: A state or integrated bar is a self-governing association composed of all practicing lawyers of the state. Membership requires the payment of an annual fee, usually not more than \$5.00, and is automatic for those engaged in active practice. A Lawyer may not practice unless he pays his dues. An integrated bar does not differ greatly from a bar association, save only in the important feature that membership is automatic and all-inclusive.

It applies to lawyers already admitted and to those later admitted. An integrated bar is not regimentation, but the integrated bar governs itself. It in no wise affects existing standards of ethics nor established practice and procedure. It is a method of making lawyers as a body more useful to themselves, to the public, and to the courts.

INTERNATIONAL LAW MEETING

The Section of the International and Comparative Law was prompted to initiate the organization of an International Bar Association which was held in Havana in June. The effects of the conference are not susceptible of precise admeasurement, nor will all of the evidence be in upon the point for a long time, perhaps never. Delegates selected from among the members of the bench and bar of 16 of the 21 republics in the Western Hemisphere fraternized with each other and studied together for a period of four days. The conditions in which these exchanges were made were exceptional in a number of respects. For example, the countries represented by the delegates were disturbed, each in its own special way, by the world-shaking events of the war, which might, but had not yet, spread to the Western Hemisphere; many of the problems of defense were common to them; adequate national defense in most instances raised serious political questions—changes in government and laws; some of these changes would involve fundamental breaks with traditional concepts and procedures; the lawyers who were meeting in the conference were important persons in their respective countries whose legal training would give them great influence in regard to proposed changes in government or laws. The combination of these circumstances makes it certain that the interchange of views in the atmosphere of friendliness furnished by the conference would be helpful to all. It seems that such a conference was long overdue and probably would not have been held at all except for a psychological by-product of the Axis menace.

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NEW BAR EXAMINATION IN MASSACHUSETTS

Only 94 of the 500 men and women who took the test in Massachusetts, where a new type of bar examination is now being used, will be recommended to the court. The percentage of successful applicants was 18.8, believed to be the lowest in history with one exception. Many of those who took the examination were doing so for the second and third times. Of the 94 to be recommended to the Superior Court, in June, ten were women. A total of 67 women took the examination.

This new type of bar examination which was begun in Massachusetts in 1940, is intended to test the ability to analyze a situation. The complicated record of a difficult case is presented to the candidate a month in advance. The questions asked in the examination have to do with the candidate's ability to dissect problems and put their elements together in a logical whole. This is supplemented by an oral examination so that always the examiners interview the candidate.

LIMITATIONS ON LEGAL PRACTICE

As a result of the study and consideration of the Federal Administrative Procedure Bills, a committee has recommended in a report which has been submitted to the Board of Governors that no administrative agency should, by its rules, permit a person not a member of the bar in connection with his practice before it, to perform acts or services which constitute the practice of law; and further that, if any person other than a lawyer makes it a business or practice to represent other persons before an administrative agency in matters involving questions of law, he should be deemed guilty of a misdemeanor. It is the committee's view that, if there is to be a general statute respecting Federal administrative procedure, the same protections against unauthorized practice of law should be contained therein as are provided by legislation in most of the states.

The Committee on Unauthorized Practice of Law held a most important meeting during the mid-winter meeting of the House of Delegates in Chicago. Among the more important matters considered, and on which action was taken, was legal advice over the radio. As a result of complaints received from bar associations, the Committee is seeking to induce the broadcasting stations in the United States, by agreement among themselves or in some other practicable way, to agree that hereafter a radio program should neither give nor offer to give legal advice, nor by title or substance, represent or lead the public to believe that it emanates from a court or is a part of the judicial system. The Committee believes that the use of the word "court" in radio programs results in a misrepresentation of the judicial process over the air which tends to lessen the respect for the administration of justice.

A conference was held with authorized representatives of Prentice-Hall, Commerce Clearing House, Alexander Publishing Co., Research Institute of America, and United States Law Week for the purpose of considering and arriving at a cooperative understanding with respect to: the danger to the public of legal advice from lay publishers and publications on specific individual legal problems, which is an entirely different question from information about legal matters generally; the danger to the public of having the services of lawyers furnished by legal publishers as part of their service in connection with such individual problems, if and when such lawyers are the employees of or responsible to the publishers rather than the client; and the danger to the public of the increasing tendency to represent to the public that the informative services are a complete answer to their legal problem, and the advertising policy of dissuading the public from seeking competent disinterested legal advice for its individual problems. The publishers evinced every desire to cooperate with the Committee with respect to these matters, and it is expected that something

constructive will be accomplished by mutual agreement.

The members of the Committee, together with representatives of the American Bankers Association Trust Division, constituting the National Conference Group, had a full day meeting at which progress was made in aiding in the bringing about of definite agreements between corporate fiduciaries and the bar. Through the cooperation of the National Conference Group, such an agreement has been drafted and is pending in Oregon, and progress is being made toward a better understanding between the bar and the corporate fiduciaries in Iowa and North Carolina. The conference with respect to these matters was attended by representatives of other state and local bar associations.

Serving on this Conference Group are representatives of the insurance and adjusting interests who speak for companies writing 90 per cent of the insurance business in the United States, and three members of the Association's Standing Committee on Unauthorized Practice of Law. A statement of principles approved by the companies has heretofore been widely circulated throughout the country, which contains many provisions that are highly in the interests of the public and the bar.

AMERICAN LAW INSTITUTE

The Council of the American Law Institute held its mid-winter meeting in New York, Feb. 17-22. The first work of importance was the Proposed Final Draft of the Restatement of Security. If approved by the Institute at its May meeting this will appear in 1942 as the 16th volume of the Restatement. It covers Liens, Pledges, and Suretyship. Much of the material has been before annual meetings in previous years. The new material this year covers Party Beneficiaries in Suretyship, Official Bonds, and Bonds in Judicial Proceedings.

There was discussed at the annual meeting in 1940, the "Youth Court Act," which had to do with the treatment of youthful offenders. This proposed statute aroused great interest

when presented and has been the subject of a large amount of public discussion since. It will be presented in revised form for approval.

The Institute is also engaged in drafting a Model Code of the Rules of Evidence. Parts of the Code have already been before the Council and annual meeting at previous sessions. This year six further chapters were added. They cover questions of Extrinsic Policy, Expert and Opinion Evidence, Hearsay Evidence, Proof of Writings, and the always troublesome questions of Presumptions with Judicial Notice. Practically all of the chapters are full of highly controversial material. The Council made a great many suggestions to the Reporter and many more are expected when the Tentative Draft of the entire Code is offered for consideration at the annual meeting.

For the first time material is presented in the Restatement of Judgments, work upon which was begun in the Spring of 1941. The Reporters for this subject are Professors Austin W. Scott and Warren A. Seavey of the Harvard Law School. The restatement in this subject is of particular interest and importance for two reasons. One is the inherent difficulty of many of the questions; the other is the comparative lack of critical material in this field as in many others in the law. The first batch of material covers "Form of Adjudication" and deals with the many problems of *res adjudicata*. The other deals with the subject of Parties.

During the year the American Law Institute has been working on (1) the Preparation of a proposed final draft of the Restatement of the Law of Security; (2) the preparation of a tentative draft of a Code of Evidence, covering all matters which it is suggested shall be included in the Code; (3) the preparation of tentative drafts relating to the more difficult portions of a Restatement of the Law of Judgments. Since last July, it has been working on a Restatement of the Division of Property relating to social restrictions imposed on creation of property interests and since January

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of this year, it has been working on a Restatement of the Division of Property relating to covenants running with the Land.

THE JUDICIAL COUNCIL MOVEMENT

The annual report of the Judicial Council of Massachusetts filed January 13, calls attention to the fact that the Judicial Council movement, which resulted largely from the recommendation of the Massachusetts Judicature Commission in 1920, has now spread throughout the country, so that more than half of the states have judicial councils for the continuous

study of the judicial system and its methods of procedure. In the latest report, the Massachusetts Council discusses at length the District Court system with tables showing the work loads and relative cost to the public in 72 District Courts throughout the Commonwealth.

In view of the fact that biennial sessions of the legislature have increased the delay in the possibilities of progress in matters of procedure by legislation, the Council emphasizes the importance of reviving the regulation of procedure by rules of court, as has been done in the Federal Courts and in a number of states.

COUNTY GOVERNMENT

By JANE B. LYNCH

THE COUNCIL OF STATE GOVERNMENTS

GENERAL

Forty-three state legislatures met in regular sessions during 1941, while the country, at the national, state, and local levels of government, turned its attention to facilitating first the defense and then the war effort. It is against this background that developments in county government during the past year are summarized.

COUNTY DEFENSE COUNCILS

Information received by the Council of State Governments in answer to a questionnaire indicates that 28 states established county defense councils in some or all of their counties during 1941 to assist in furthering the defense program at the county level. In all instances, the county councils are responsible to the state council of defense or the governor and in some cases their members are appointed by the governor.

County defense councils have assisted the states whenever necessary, as in the development of the national tire rationing program which was decentralized from the Office of Price Administration through the governors and state defense councils. Examples

of the activities of county defense councils are those being undertaken in Oregon, Indiana, Montana, and Wyoming.

In Oregon, 36 county defense councils, responsible to the state defense council, have been established. Their personnel was appointed by the governor on the recommendation of the County Court and representative citizens. Aircraft warning services have been established in every county west of the Cascade Mountains with 475 observation posts manned by men trained by the Army Air Corps. Air-raid precaution services have been established in 20 counties, and a Medical Disaster Relief Division has been organized as a part of the county defense council set-up, with the cooperation of the local physicians, nurses, hospitals and Red Cross. In Indiana, the state and county highway departments are in charge of and are training emergency road and highway maintenance crews. The State Police and Fire Chiefs and the State Board of Health are working through the county and local councils in carrying out their part of the defense program.

COUNTY GOVERNMENT

The Montana county defense councils are assisting in the preparation of maps of all the counties, showing the highways, streams, telephone lines, schools, airports, and emergency landing fields. Ski patrols are being organized in the mountain counties to act in any emergency, such as an airplane crash, accident, or illness. In Wyoming, rifle clubs are being organized in each of the 23 counties by the defense councils in cooperation with the sheriff of the particular county.

COUNTY AIRPORTS

Great impetus was given to the development of county airports by the defense program. The Arizona legislature authorized counties and incorporated cities to contract for the establishment and operation of airports. Counties in California were authorized to aid any city in the acquisition of real or personal property for the construction or improvement of airports. Newcastle and Sussex counties in Delaware were authorized to develop airports. In Florida, the legislature enacted legislation permitting Okeechobee County to borrow the necessary funds to purchase property for airport expansion and also passed a general bill permitting certain counties to acquire land for airport purposes.

Counties and municipalities in Idaho were authorized to levy a tax and make cooperative agreements for the construction and maintenance of airports. An Illinois Act provided for the creation of aviation districts by any two or more contiguous counties by a referendum requested by 10 per cent of the voters of the counties involved. Illinois counties may also appropriate money, levy taxes, borrow money and issue bonds on the credit of the county as well as revenue bonds, but bond issues must be submitted to a referendum.

Similar legislation permitting all or certain counties and towns to acquire, maintain, and operate airports was enacted by Kansas, Massachusetts, Minnesota, Montana, New York, North Carolina, Oregon, Pennsylvania, South Dakota, South Carolina,

Washington, and Texas. In some instances the legislature specifically authorized certain counties to appropriate or borrow money for this purpose. Oklahoma enacted an act authorizing the leasing of lands belonging to the counties to Federal, state, and municipal governments for airports.

PLANNING AND ZONING

The exigencies of national defense also resulted in additional states enacting legislation to permit the establishment of county planning boards or to permit counties to promulgate and enforce airport zoning regulations. Certain counties in Kansas, Minnesota, Nevada, and Utah were authorized to establish Planning Boards or Commissions, and the Missouri county planning statute was amended to include any county in which an army camp is located. A bill in Arizona to permit any county to create a planning and zoning commission died on adjournment. Several counties in Georgia were authorized to pass and enforce planning and zoning regulations, and the County Commissioners of Baltimore County were authorized by the Maryland legislature to adopt comprehensive zoning regulations. Specific provisions for the promulgation of airport zoning regulations were enacted by the legislatures of Nebraska, New Hampshire, North Carolina and Wyoming.

PUBLIC PROPERTY

The Florida legislature exempted from taxes property in Highlands County leased to the United States for national defense purposes. Legislation permitting counties either to sell, lease, and, in some instances, to donate property to the state or the United States for defense purposes was enacted by the legislatures of Georgia, Iowa, South Dakota, South Carolina, and Washington. Oregon enacted a law empowering counties to sell or lease real property acquired by tax foreclosures to persons or firms engaged in producing materials for national defense. Texas authorized any city or county to acquire lands

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for the use of the United States Government.

COUNTY POLICE AND COUNTY FIRE CONTROL

Maryland and Minnesota enacted legislation authorizing the appointment of additional county police, in the former state, and of additional assistant county attorneys and deputy sheriffs, in the latter. An interesting bill, from the point of view of inter-governmental cooperation, is that enacted in New York which permits the governor to mobilize the police forces of the state, including those of the state, counties, and cities, in times of emergency. Arizona and Maryland enacted laws for the additional support of county fire companies, and New York authorized the Board of Supervisors in any county to expend such sums as it may deem necessary for the establishment and maintenance of fire training schools for volunteer firemen of the county.

DEFENSE HOUSING

Several states enacted legislation authorizing their local housing authorities to cooperate with, act as an agency of, and secure financial aid from the Federal Government to assure the availability of safe and sanitary dwellings for persons engaged in national defense activities. Thirteen states at the present time have set up 256 county authorities, but South Carolina and Arkansas are the only states which already have Federal funds for each county in the state.

OPTIONAL CHARTER IN NORTH DAKOTA

An important development with respect to optional charters took place in North Dakota. The 1941 legislature, acting under the authority of the constitutional amendment adopted by the voters of the state in June, 1940, enacted two bills providing for an optional form of county government. One of these provides for a form of county government to be known as the County Manager Form. The act provides that, upon the petition of 35 per cent of the voters of the county,

or upon a resolution of the majority of the full Board of County Commissioners, the question of adopting the county manager form of government shall be presented to the voters at the next election. If 55 per cent of the voters vote for the plan, it shall go into effect at a date specified in the petition or resolution.

The County Board is set up as the policy determining body and, except as otherwise provided by law, is vested with all powers of the county, including power to levy taxes and to appropriate funds. It may not interfere with the appointment or removal of administrative officers or employees appointed by the County Manager.

The county manager is to be appointed for an indefinite tenure by the County Board, but is removable at the pleasure of the Board, and need not be a resident of the county at the time of his appointment. Under this plan, the county manager is responsible for the proper administration of all the affairs of the county which the Board has authority to control. The administrative duties with which he is charged are to be distributed among three departments—finance, public works, and public welfare. Upon recommendation of the county manager, additional departments may be established and department directors are to be appointed by the manager.

In addition to such departments, the county manager may appoint a county attorney. The sheriff, county judge, and county superintendent of schools are retained as elective officials. The offices of the auditor, treasurer, register of deeds, clerk of the district court, coroner, public administrator, surveyor, county justices of the peace and county constables are abolished and their duties assigned to one of the departments or elective officials.

The other act, to be known as the Short Form of County Managership, differs from the foregoing in that county departments are not created and their duties and powers are vested in the county manager. He may, however, either act as or appoint a county treasurer, tax collector, and county

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purchasing agent. As in the first plan, the manager may appoint a county attorney. The duties of the sheriff and county constables are vested in one or more police officers to be appointed by the manager. The functions of the auditor, treasurer, registrar, and county surveyor are hereafter to be performed by or under the direction of the county manager. The county superintendent of schools and the county judge are retained as elective officials, the latter to assume the duties of the clerk of the county court and the county justices of the peace.

COUNTY MANAGER VARIATION IN SOUTH CAROLINA

A variation of the county manager form was established in Darlington County, South Carolina by the legislature of that state. An act was passed providing that the manager, who was to have all the duties and powers heretofore vested in the County Commissioners, was to be selected by the majority vote of the Darlington County legislative delegation, including the senator. Later in the session, another act was passed, repealing this law and providing that the county manager be appointed by the governor, on the recommendation of the aforementioned legislative delegation. An advisory commission of five members, to be appointed by the governor, is also authorized.

MERIT SYSTEMS

Illinois revised its present merit system method of appointing the Superintendent of Public Welfare and administrative staff in counties of less than 500,000 inhabitants. The act creates a Merit System Council of three state Civil Service Commissioners with authority to provide rules and regulations for the maintenance of a merit system in accordance with standards prescribed by the Federal Social Security Board. Examinations for positions in the county welfare departments are to be on a statewide basis.

Michigan.—The Michigan legislature enacted a bill, authorizing coun-

ties having a population of 300,000 or more to adopt the civil service system provided for by the act. If a county votes to adopt the plan, a Civil Service Commission of three members is appointed by the Board of Supervisors to administer the merit system in the county.

Minnesota.—The State Director of Social Welfare in Minnesota was empowered by the legislature to establish a merit plan for county welfare board employees in all counties of that state. Enabling legislation was also enacted by the Minnesota legislature to permit Ramsey and St. Louis counties, the second and third most populous counties in the state, to establish civil service for their county employees, after approval by referendum of their voters at the next general election. A similar proposal for the most populous county in the state, Hennepin County, failed of passage.

ABOLITION AND CONSOLIDATION OF OFFICES

Illinois.—Attempts to consolidate and abolish offices in several states met with little success. An act was introduced in Illinois, but did not pass, providing that in all counties with a population of less than 500,000 the powers and duties of the board of review, county clerk, and county collector were to be transferred to and exercised by the county property tax supervisor. The County Board in such counties was authorized to abolish the office of county assessor, supervisor of assessments, or board of assessors, and transfer its functions to the county property tax supervisor. The county property tax supervisor, furthermore, was to be selected by the County Board, subject to the approval of the State Department of Taxation.

Kansas.—The Kansas Legislative Council, in the proposed new tax code submitted to the 1941 legislature, recommended the reorganization of certain county offices. These proposals, which were not adopted by the legislature, were for the creation of a separate, full-time, appointive office

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of county assessor; the consolidation of the office of county clerk and county register of deeds, and the creation of a separate county board of equalization in place of the board of county commissioners, acting *ex officio*. It is expected that these proposals will be before the Kansas legislature again in 1943.

Georgia and New York.—In Georgia, however, the office of county registrar in counties having a population of 200,000 or more was abolished and the tax collector or commission was to assume its duties. In New York, the offices of sheriff and register were abolished in the five counties of New York City and replaced by a single officer for the city in each case, as a result of a referendum.

NEW PURCHASING OFFICES

The movement for centralized purchasing by counties gave rise to the establishment of the office of county purchasing agent in several states. The legislature of Georgia created a purchasing department in all counties of 200,000 inhabitants or more and authorized the employment of a County Purchasing Agent to carry out the functions of the Department. Maryland provided for the appointment of a county purchasing agent for Montgomery County. In Wisconsin, the legislature amended the law authorizing Milwaukee County to appoint a county purchasing agent to extend that authority to any county having a population of 125,000 or more. A bill failed of passage in the Massachusetts legislature, authorizing a county purchasing agent in the State Department of Corporations and Taxation, to be appointed by the director of accounts.

COUNTY FUNCTIONS

Most of the developments in county functions during 1941 related to national defense. Several states enacted laws relating to the functions of counties, however, that might be commented upon here. California authorized the acquisition, management, operation, and maintenance of museums

and art galleries by counties. Illinois authorized county boards to purchase, lease, or otherwise acquire and maintain and operate a radio broadcasting station for police purposes and to cooperate with other counties to this end. In Wyoming, the Boards of County Commissioners were authorized to acquire lands and other property for the purpose of fair grounds, airports, parks, and pleasure grounds. Texas authorized agreements between counties and the United States for rural rehabilitation projects and also enacted a law permitting counties to create and support a revolving fund for the distribution of surplus commodities in cooperation with the Federal Government. Wisconsin counties were authorized to adopt food stamp, cotton stamp, or any other surplus commodity absorption plan in connection with furnishing relief to needy persons.

COUNTY FINANCE

In addition to developments in county purchasing mentioned above, several states enacted legislation with respect to county accounting systems and audits. Maryland authorized the County Commissioners of Montgomery County to install a cost accounting system in any office in the county. In Oregon, the legislature passed a law requiring all counties, not previously having elected to have audits made by the Secretary of State, as provided in an earlier law, to be audited officially at least once each year by duly accredited accountants. The counties may also install accounting systems which must conform to the uniform system already designed by the Secretary of State.

In Illinois, the law permitting counties under township organization, having a population of from 75,000 to 300,000, to elect a county auditor was made mandatory, and all counties within those population limits, not having an auditor at present, must elect one in November, 1942.

In Maine, the State Auditor was granted the authority to install uniform accounting systems and to perform post-audits of all accounts and

COGNATE SOCIETIES AND RESEARCH INSTITUTIONS

financial records of the several counties.

Several states authorized their counties to invest in United States bonds. Among the countries reported as having invested in defense bonds, as of January, 1942, were Duval, Orange, and Lake counties, Florida; Barnwell and Clarendon counties, South Carolina; and Moffat County, Colorado.

CONCLUSION

The foregoing summary is not all-inclusive. It would be impossible to discuss the mass of legislation affecting counties that was enacted by the several states during 1941, and in some

instances copies of the acts are not yet available. From the developments that have been reported here, however, it is evident that the national emergency has tended to stimulate the already apparent trend towards increased state supervision of county government at the same time that it has expanded the functions of the county and augmented the necessity for and possibilities of intergovernmental cooperation. Continuance of this trend may be expected, certainly as long as a well-integrated and coordinated organization of the country, from the National Government to the community, is essential for an all-out war effort.

PERIODICAL PUBLICATIONS

National County

American County Association,
Hotel La Salle, Chicago.

Public Works

310 East 45th Street, New York
City.

State Government

American Legislators' Association,
850 East 58th Street, Chicago.

COGNATE SOCIETIES AND RESEARCH INSTITUTIONS

(For further information, the reader may address the following organizations)

AMERICAN LEGISLATORS' ASSN., 1313 E.
60th St., Chicago.

CIVIL SERVICE FORUM, 2 Lafayette St.,
New York City.

NATIONAL ASSN. FOR CONSTITUTIONAL
GOVERNMENT, 716 Colorado Bldg.,
Washington, D.C.

NATIONAL CIVIL SERVICE REFORM
LEAGUE, 521 Fifth Ave., New York
City.

NATIONAL MUNICIPAL LEAGUE, 299
Broadway, New York City.

THE COUNCIL OF STATE GOVERNMENTS,
1313 E. 60th St., Chicago.

DIVISION V

MUNICIPAL GOVERNMENT

NEW YORK CITY AFFAIRS

BY WALLACE S. SAYRE
NEW YORK CIVIL SERVICE COMMISSIONER

REELECTION OF MAYOR LA GUARDIA

The outstanding political development of 1941 was the reelection of Mayor La Guardia for a third term, a political development rare in the history of the city and unprecedented among reform administrations. The opposition was aggressively led by a popular candidate, District Attorney O'Dwyer, and the election itself was closely contested. The election was one with many cross-currents, not the least powerful of them connected with rapid development of the international crisis. The results of the election, however, were clear-cut. Not only was Mayor La Guardia returned to office by a substantial majority but Fusion control of the Board of Estimate was also insured by the 12-to-4 ratio of votes secured by the Mayor and his associates. Notable among the changes in the Board of Estimate was the failure of Manhattan Borough President Stanley Isaacs to secure renomination from the Republican party. This development was ameliorated somewhat by the election of a Fusion candidate to that office and the election of Mr. Isaacs to the City Council.

CITY COUNCIL ELECTIONS

The proportional representation election for councilmen resulted in continued control by the Democratic party. The new ratio of control, 17-to-9, represents a gain in Fusion

strength but still leaves complete committee control in the hands of the opposition. In addition to the election of Mr. Isaacs to the Council, other notable developments were the election of the first negro representative, the Rev. A. Clayton Powell of Harlem, the election of three women members, and the election of the first communist member of a legislative body in New York City.

CONSUMMATION OF COUNTY REFORM

Second only to the reelection of Mayor La Guardia and continued control of the Board of Estimate was the final triumph of the advocates of county government reform in the city through approval of the referendum proposal abolishing the five county sheriffs and the four county registers and consolidating these offices into a city sheriff and a city register, to be appointed by the Mayor from competitive civil service lists. The referendum was approved in November, competitive examinations were held and completed in December, and the Mayor's appointment of a city sheriff and city register was upheld by the Court of Appeals at the end of the year. In addition to savings of an estimated \$500,000, this final chapter in county reform carried with it also the abolition of over 300 patronage positions of great importance to the Democratic organization within the city.

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THE CITY AND THE DEFENSE PROGRAM

The year was characterized also by the accelerating effects of the defense program and finally the war program of the National Government. Mayor La Guardia was named National Director of Civilian Defense in May and each month thereafter saw the rapid development of administrative adjustments by the city government to advance the defense program. When war was declared in December, the city government was already substantially, as the Mayor put it, "on a war footing" and its administrative agencies were ready for the instant cooperation required by the national administration.

CITY FINANCES

The Comptroller reported in 1941 that, during the past 7½ years, the city has redeemed more than \$3,000,000,000 of debt, representing obligations of all types, and at a rate of

from \$316,000,000 to \$547,000,000 per year, exclusive of renewals and re-funding operations. This record is cited as convincing evidence of the city's ability to meet its financial obligations. In addition, the city's unreserved debt margin has gradually been built up from \$62,284,087 on April 1, 1937 to \$111,960,890 on July 1, 1941. The soundness of the city's financial position is further demonstrated by the continued record high percentage of tax collections, the low interest rates being paid on new obligations, the large amounts of old debt redeemed each year, the steady replenishment of the debt-incurring power, and the prudent planning of a reduced program of capital improvements in the future.

The City Treasurer reported that city tax collections continued to improve in 1941. The following comparative fiscal statistics reveal the steady trend toward higher current tax collections and declining tax arrears.

TAX LEVIES AND COLLECTIONS

	1938	1939-40	1940-41
Assessed valuation.....	\$16,650,297,794.00	\$16,640,632,939.00	\$16,470,152,554.00
Real Estate Tax Levy	490,675,929.54	492,476,163.51	496,746,659.94
Current Tax Collections.....	439,759,327.08	446,561,143.88	450,106,709.95
Arrears Tax Collections.....	38,700,263.44	42,290,688.72	34,239,606.68
City's Share of State Taxes..	39,097,567.41	36,518,760.00	35,765,483.00
Miscellaneous City Revenue..	72,759,999.35	76,429,752.00	72,920,232.00
Emergency Tax Collections..	70,511,527.84	79,226,393.00	83,277,191.19
Certificates outstanding against Taxes.....	66,429,000.00	63,129,961.00	71,214,955.00
Uncollected Taxes Pledged..	171,987,713.00	162,814,475.00	167,894,405.00

CITY PLANNING

During 1941 the New York City Planning Commission made further progress in the preparation of a Master Plan. Master Plans were adopted for Express Highways, Parkway and Major Streets, Existing Schools and Parks, and Sewage Treatment Plants and Tributary Areas. Extensions of the Express Highway and Major Street system included the mapping of Gowanus Parkway, Park Avenue, Hicks Street, and other sections of the Brooklyn-Queens Connecting Highway, sections of the East River Drive, approaches to the Battery-Brooklyn

Tunnel, and a new approach to Brooklyn Bridge in Brooklyn.

Studies were completed on Existing Land Uses, and extensive re-zoning included new Use District Maps for the entire Borough of Richmond and large areas in other sections of the city. The Court of Appeals upheld an application of the new "G" district, from which apartments are excluded, and several new "G" districts were adopted. The Commission reviewed and adopted a number of new public housing projects and amended the Capital Budget for the acquisition of a large new airport on Jamaica Bay.

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The Capital Budget for 1942 and the Five-Year Program for 1943-47 was adjusted to war conditions by deferring construction during the war emergency and by making large sums available for the planning of projects to be undertaken promptly when the war ends. This long-range planning was conceived as part of a national post-war program and included an unofficial assessable improvement program. These items as well as additional projects are being prepared as the submission of the City of New York for the Public Work Reserve.

On Aug. 24, 1941 R. G. Tugwell resigned as Chairman of the City Planning Commission to become Governor of Puerto Rico, and was succeeded on Jan. 1, 1942 by Edwin A. Salmon. At the same time Park Commissioner Robert Moses became a member of the Commission.

CITY PURCHASING

The Department of Purchase during 1941 was concerned with adjusting itself to the new conditions in the markets and buying centers. During the year preceding the war, the Department had operated in a buyers' market in which it had become well versed and skillful. As the Federal Government program for supplying materials to the democracies has made progress, the buyers' market has vanished, and from it has emerged a sellers' market. To this has been added the complicated priorities system and the growing scarcity, even unavailability, of certain materials.

The sellers' market created a corollary problem no less important than the scarcity of material. Prices of individual commodities increased greatly, while the amount of money available to buy such items as food for hospitals, equipment for the Police and Fire Departments, and maintenance supplies for the Department of Public Works remained fixed. This problem has been met by searching the markets, locating additional sources of supply, using substitute materials, and by filing special requests for priority ratings.

Since the declaration of war, the

Department has been called upon to adjust itself to a strict war economy for normal purchasing and to set up a special organization for the procurement of materials needed in the civilian defense of the city.

LEGAL MATTERS

County Reform.—The Law Department reported progress in county reform. This long awaited reform became a reality with the decision of the Court of Appeals in December, upholding the validity of a referendum adopted by the voters at the general election. Action had been brought to invalidate the referendum which abolished the five elective offices of Sheriff and the four elective offices of Register.

Condemnation.—Trials were completed and awards made in condemnation proceedings to acquire lands for important traffic arteries—Hutchinson River Parkway extension, East River Drive from Grand Street to 14th street, Marginal street from 30th street to 49th street, Hicks street and Hamilton avenue widenings to afford connections to the downtown Brooklyn section of the Belt Parkway, Shore Parkway from Bensonhurst Park through Sheepshead Bay, and the second section of the Queens Connecting Highway. Housing proceedings completed were the Fort Greene Houses in Brooklyn and the Clason Point Gardens proceeding in the Bronx. The Second, Sixth, and Ninth avenue elevated highway proceedings were tried and awards made. The Department obtained appellate court approval of the recently initiated practice of consolidating in one action the foreclosure of numerous tax liens affecting properties in different ownerships. It also established the city's immunity from liability for change of grade damages caused by the acts of a state-created authority (New York City Parkway Authority), and sustained the Housing Authority's right to enter into weekly leases with its tenants and to dispossess those tenants who held over after the Authority had terminated their tenancies.

Licenses.—The appellate division

sustained the Department's contention that no licensed employment agency may charge fees based on a percentage of the yearly salaries of persons for whom it secures employment unless such persons are hired for at least a year or at yearly salaries.

Water Supply.—In two test cases the Department established the principles (1) that commissioners of appraisal have no jurisdiction to hear claims for damages to wells caused by the construction of the Delaware Aqueduct where no portion of the claimant's properties were acquired by the city; (2) that owners of sub-surface easements are entitled to nominal awards only for the acquisition of such easements in the construction of the Delaware Tunnel. These decisions will serve as precedents in cases of similar claims along the entire 85 mile water tunnel.

Workmen's Compensation.—In co-operation with officials of the Department of Hospitals and others, the Department succeeded in establishing procedures which will decrease the city's liability for tuberculosis compensation claims of hospital employees and at the same time rehabilitate employees recovering from this disease. All hospital employees are now required to have annual X-ray examinations and other precautions are also taken.

Franchises.—In an action instituted by the Long Island Railroad, it was contended that \$17,000,000 of the \$23,000,000 that it cost to depress the railroad tracks of the Long Island Railroad in the Boroughs of Brooklyn and Queens should be paid by the city. However, the Court of Appeals ruled that no part of this cost need be paid by the city.

PUBLIC WORKS

The fourth year of the Department of Public Works (1941) saw the beginning of the effect on its governmental activities of the accelerating defense production of the country's industries. The immediate results on the activities of the Department were a curtailment in the amount of new construction commitments, adoption

of additional economies in the operation of the bridges, public buildings and sewage treatment works under its jurisdiction, and adherence to city-wide restrictions on requests for additional personnel and the filling of vacancies caused by death, retirement or service with the armed forces.

During the year one large modern building was added to the properties under the jurisdiction of the Department. These now comprise 67 public buildings, 48 bridges, four modern sewage treatment works, and 11 older small plants. The total value of this large number of municipal properties is approximately \$350,000,000, and their operation requires the services of practically three-fourths of the departmental personnel of 4,000 men and women.

During the four years since the establishment of the Department in 1938, the operating costs for these properties have averaged about \$6,000,000 annually. Although additional properties have been added to the original list during this period, the normal resultant cost rise has been held in check by the application of engineering and management methods to secure increased efficiency and economy. During 1941, operating and maintenance costs for bridges were nearly \$2,000,000; for public buildings about \$3,250,000, and for sewage works slightly over \$1,250,000.

Measured in terms of the estimated cost of projects, the design program of the Department, with the exception of sewage works, has been progressively curtailed during the past four years. A \$74,000,000 program in 1938 dropped to \$52,700,000 in 1940, bridges and buildings being about half the 1938 figure. Projects for sewage treatment steadily increased from \$23,000,000 in 1938 to \$29,250,000 in 1940. Estimates for 1941 are: bridges, \$4,500,000, public buildings, \$8,750,000 (principally for structures such as hospitals, markets, and similar specialized projects to be operated by other city departments as the sponsoring agencies) and sewage treatment works, \$16,000,000.

As an offset to the restriction of authorizations for new constructions,

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the increase in the design program to provide a back-log of projects to take up the slack of the post-war period is permitting a realignment of the personnel of the department rather than a drastic reduction. This program, aided by the Works Projects Reserve of the Federal Government, was in preliminary stages at the close of 1941.

SEWAGE DISPOSAL

No new sewage works were completed during the year but construction progressed on the Hart Island works (1.5 m.g.d.) and the large Jamaica works, an activated sludge plant of 65 m.g.d. capacity. Progress continued on secondary treatment units of the 40 m.g.d. Bowery Bay activated sludge plant in which primary or partial operation started in November 1939. Work continued on the construction of a 35 m.g.d. extension to the 35 m.g.d. Coney Island works which is expected to be put into service early in 1942. Progress in the treatment of New York's sewage is vividly portrayed by comparative figures. Since the start of the city-wide program in 1930, the quantity of sewage treated has increased three times but, due to the efficiency of the modern plants already built, the pollution removed is over 20 times greater.

The several buildings completed in 1941 are overshadowed by the Criminal Courts Building and City Prison which was dedicated on June 30, 1941, just under three years from the date of ground breaking. This magnificent structure occupying two city blocks in Manhattan's Civic Square cost \$19,800,000 and its construction presented many unusual foundation and structural problems. The steel frame required 17,000 tons of steel; the exterior 162,000 cu. ft. of limestone, quantities without equal for this type of structure. This 17-story courts building, with 26 courtrooms of two-story height and three grand jury rooms, also houses several agencies and departments associated with law enforcement activities. The prison portion of the structure is 12 stories in height and provides 835 cells in addi-

tion to medium security dormitory facilities.

PUBLIC RELIEF

During 1941, the Department of Welfare expended \$136,523,000 for all forms of public assistance and its administration. This sum includes expenditures for the Board of Child Welfare, which was merged with the Department on July 1 and became the Division of Aid to Dependent Children. The number of active cases and persons, as of Dec. 15, 1941, by category, as set forth in the following table, reveals the extent of the aid rendered by the Department.

Category	Active Caseload	Persons
Home Relief.....	113,624	290,877
Veteran Relief.....	6,881	21,882
Old Age Assistance.....	55,042	55,042
Blind Assistance.....	1,511	1,511
Aid to Dependent Children	21,452	60,924
Children in Institutions		
and Foster Homes	21,160	21,160
Homeless Care.....	3,760	3,760
Total.....	223,430	455,156

Thus, in spite of generally declining caseloads, the Department still provides food, shelter, and other necessities for a population which daily exceeds the population in the city of Newark or of Rochester. The cost of the program to the city was \$78,784,000, to the state \$43,595,000, and to the Federal Government \$14,144,000.

On March 1, 1941, the Federal Orange and Blue Stamp Plan, which had been in operation in the Borough of Brooklyn on an experimental basis, was extended throughout the entire city. During November 1941, 165,000 cases were eligible to participate in the plan. Of this number, however, only 115,000 cases, including 375,000 persons, in all categories of assistance including WPA workers and cases certified by private agencies, purchased stamps, thus increasing their food purchasing power by approximately 50% as a result of the plan.

Approximately \$28,250,000 of orange stamps were sold during 1941. Since 50¢ in blue stamps are given free for

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every \$1.00 purchase of orange stamps, the plan has resulted in giving to the population of New York City public assistance during 1941, \$14,125,000 of additional buying power for such surplus commodities as butter, eggs, pork products, fresh fruits, and vegetables.

CIVIL SERVICE

The outstanding accomplishment of the Civil Service Commission in 1941 was the completion of the transfer of 26,000 employees of the private railroads purchased by the city under the subway unification plan of 1940. This reclassification represents a 20% increase in the city personnel under the jurisdiction of the Commission. Of highest importance to the merit system is the fact that this great increase is added to the competitive class. The extension of the competitive class under the merit system has been the major objective of the Commission. In 1933, 54% of the city employees was in the competitive class; at the end of 1941, the percentage of competitive employees was slightly over 90%. This represents an extension of the merit system upward, outward, and downward which is as yet without a parallel in the rest of the country.

The completion of the transit em-

ployees reclassification represented the major quantitative accomplishment of the Commission. Its major qualitative achievement was in the steady improvement of selection, classification, and training procedures. Two outstanding examinations were those for City Sheriff and City Register, which were announced, administered, rated, and completed between the approval of the referendum in November and the effective date of the reform, Jan. 1, 1942.

Of first importance in the future program of the Commission was the continued development during the year of the Commission's training program for city employees. Through its bureau of training the Commission extended in 1941 its training program from the 7,000 employees trained in 1940 to 12,000 trained in 1941. During the latter part of the year, the training bureau began the development of defense training, and as the year ended it was training 1,000 city engineers in municipal bombardment protection, 200 city airport employees in airport protection, 400 correction officers in defense problems connected with prison administration, and was conducting several other similar defense training activities.

GROWTH OF THE MERIT SYSTEM 1934-1941

	1934	1935	1936	1937	1938	1939	1940	1941
Unclassified.....	390	400	415	418	307	379	357	384
Exempt.....	691	642	663	629	529	443	439	445
Competitive.....	46,699	50,307	55,867	62,815	76,148	90,730	118,864	119,508
Non-competitive	15,085	13,373	14,761	16,518	16,756	16,783	12,348	12,346
Labor.....	23,309	24,280	24,267	26,767	24,736	12,562	16,323	16,050
Total.....	86,174	89,002	95,973	107,147	118,456	120,897	148,331	148,733

HEALTH

Health Commissioner Rice reported that the general death rate of New York City has never been as low as during 1941. New low mortality records were also established in infant and maternal death rates, diphtheria, pneumonia, scarlet fever, appendicitis, and certain other diseases.

In 1941 the Health Department continued and intensified health activities in connection with the national de-

fense program. These included special efforts for the detection and control of tuberculosis and venereal diseases among selectees; preparation and storage of vaccines and other biological products by the Department's laboratories; the training of civilians in first-aid methods and technique through courses conducted at the Department's health centers in cooperation with the American Red Cross and the WPA; enrollment of volun-

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teers to aid the Department's nurses so that the latter may be enabled to devote more time to technical nursing duties; an intensified nutrition education campaign begun in December and conducted jointly with four other municipal departments and with other public and private agencies whose activities are related to health.

During 1941 a total of 863,000 Wassermann tests was made at the Department's laboratories. Of this number, about 230,000 blood tests were for selectees. In this group approximately 2 per cent of the individuals were found to have positive reactions.

The Department's 21 diagnostic social hygiene services examined 54,000 individuals, and the clinics gave 425,000 treatments to 27,000 individuals.

The Department made thorough chest examinations of those rejected for service after initial X-rays at army induction stations. After examination, the Department either confirmed the original diagnosis or re-certified the individual for service. The tuberculosis surveys among apparently healthy persons continued to be of greatest significance in the Department's case-finding program. A total of 61,443 individuals were X-rayed, making 386,584 since 1933. At the Department's 23 tuberculosis stations, over 79,000 individuals were X-rayed (a 15% increase over 1940) and these stations had a total attendance of 188,000. Approximately 190,000 X-rays were made during the year. These included X-rays made in mass surveys.

During the school year, 1940-41, the Health Department made nearly 111,000 medical examinations of elementary school children.

The Department's 64 (one more than 1940) child health stations gave care during the calendar year 1941 to 92,000 infants and pre-school children. About 405,000 visits were made to these stations for regular conferences. The number of new infants registered at the stations increased from 31,000 in 1940 to 34,000 in 1941.

Extensive nutrition activities, safety promotion, communicable disease control, child and dental hygiene, and medical advisory and treatment serv-

ices were carried on by the 15 health centers.

First-aid classes were organized in summer at the health centers, in cooperation with the WPA and the American Red Cross. During the last four months of 1941, about 400 such classes, with an attendance of nearly 9,000, were functioning. Two thousand more persons have enrolled and will begin as soon as the classes are organized. Certificates for the completion of the courses have already been issued at the health centers to more than 1,500.

HOSPITALS

At the end of 1941, the Department of Hospitals reported the completion of the new 385-bed Psychiatric Pavilion and Out-Patient Building at Kings County Hospital, Brooklyn; ground broken for a new 315-bed cancer hospital in Manhattan; a new outpatient building at Lincoln Hospital Bronx; a new 150-bed tuberculosis pavilion at Riverside Hospital, Bronx, and the beginning of the renovation of the main building at Harlem Hospital. These added units and increases in the Department's tasks required over 1,200 new positions in the Department's personnel budget.

The Department also greatly expanded its training program in 1941 in order to: (a) improve the quality of service by in-service training of employees; (b) prepare employees for home defense activities; (c) replace employees lost to the military service and defense industries with properly trained substitutes; and (d) provide an adequate reservoir of nursing personnel. In several areas this increased training program was conducted in cooperation with the training bureau of the Municipal Civil Service Commission.

The Department has also been engaged in extensive preparations in connection with home defense, including organization of 19 emergency medical field units. As the year ended, the Department had become the focal point in all hospital defense activities of the city.

PARK IMPROVEMENTS

Flushing Meadow.—During 1941 the Department of Parks continued the expansion of park facilities. Twenty-nine new playgrounds were added to the park system and ten of the older ones reconstructed. The Flushing Meadow Amphitheater (swimming pool) in Flushing Meadow Park was opened on July 26 with a special concert by the Philharmonic Symphony Orchestra. This latter facility, with its weekly evening pool shows, was an outstanding success from its opening date. Also in Flushing Meadow Park (site of the World's Fair, 1939-40) construction work in connection with the development of the ultimate park proceeded according to schedule. The ice- and roller-skating rinks in the New York City Building were opened officially on Sunday Jan. 12, 1941, by Mayor La Guardia and other city officials, and with exhibitions by well known skaters.

Beaches.—At Coney Island three and one-half acres of land were purchased and added to the beach between Stillwell Avenue and Ocean Parkway. Also 18 acres of private property just east of the public beach in Brighton were added as an extension of the public water front and the boardwalk extended through this area. The entire Coney Island beach has also been improved by removing the brown sand and pumping in clean, white sand dredged up at Sandy Hook.

Parkways.—The construction of parkways continued with the completion of that section of the Belt Parkway through Sheepshead Bay bypassing Emmons Avenue, which was opened on May 30, and the elevated Gowanus Parkway Improvement from Owl's Head Park along Third Avenue to Hamilton and Prospect Avenues, which was opened to traffic Nov. 1. The Hutchinson River Parkway was extended from its old terminus in the northern park of Pelham Bay Park to Eastern Boulevard and the Bronx-Whitestone Bridge approach, and carries the Belt and other arterial traffic without interruption

into the country and state parkways and highways of Westchester, along the Hudson Valley and on the Merritt Parkway in Connecticut.

HOUSING

The New York City Housing Authority now operates 11 completed projects housing 12,969 families. Three were completed in 1941, East River Houses in Manhattan, Kingsborough Houses in Brooklyn, and Clason Point Gardens in the Bronx. These three new projects house a total of 2,736 families previously living in sub-standard housing.

The Authority also built and operates a recently completed Defense Housing project for enlisted personnel, Wallabout Houses near the Brooklyn Navy Yard. Fort Greene Houses, the first state-aided project and the largest public housing project in the country, is under construction in the Brooklyn Navy Yard neighborhood. The first units of this project will be ready some time in 1942. Sites are being cleared for two other projects, Chelsea Houses and Amsterdam Houses, and land is now being acquired for four more projects. This brings the program to a total of 18 projects (not including the Defense Housing project) which will house a total of 23,406 families.

New York City's public housing program is made possible by financial assistance from the Federal Government, the state, and the city. Available subsidies from the Federal Government and the city occupancy tax will be exhausted on completion of the projects described above, but there remains a balance of state funds which, with city subsidy, will be available during the next three years, and which will provide housing for approximately 10,000 additional families.

Projects now in operation, in construction or approved are as follows:

The great demand for apartments in public housing projects is indicated by the fact that more than 200,000 applications had been received by December 1941. Of these, about 35,000 were received in 1941, 17,000 families

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Project	Borough	No. of Families	
First Houses	Manhattan	122	In operation
Harlem River Houses	Manhattan	576	In operation
Williamsburg Houses	Brooklyn	1,622	In operation
Red Hook Houses	Brooklyn	2,545	In operation
Queensbridge Houses	Queens	3,149	In operation
South Jamaica Houses	Queens	448	In operation
Vladeck Houses	Manhattan	1,531	In operation
Valdeck City Houses	Manhattan	240	In operation
East River Houses	Manhattan	1,170	In operation
Kingsborough Houses	Brooklyn	1,166	In operation
Wallabout Houses	Brooklyn	207	In operation
Clason Point Gardens	Bronx	400	In operation
Fort Greene Houses	Brooklyn	3,501*	Ready for occupancy 1942
Chelsea Houses	Manhattan	617*	Demolition begun
Amsterdam Houses	Manhattan	1,026*	Demolition begun
Jacob Riis Houses	Manhattan	1,476*	Land now being acquired
Edwin Markham Houses	Richmond	400*	Land now being acquired
Lillian Wald Houses	Manhattan	1,782*	Land now being acquired
Brownsville Houses	Brooklyn	1,428*	Land now being acquired
		23,406	

* Subject to revision.

were investigated, and 7,200 families were either assigned apartments or placed on waiting lists for future assignments.

The Authority, during 1941, continued its program of demolition of sub-standard buildings through supervision of a WPA demolition project as well as the work of re-location of low-income families forced to find new quarters because of construction of housing projects or condemnation of buildings by the city to clear sites for public improvements or obliged to move for other reasons.

DEPARTMENT OF CORRECTION

The year 1941 saw the end of an era in the history of the Department of Correction. On Nov. 9, 1941 the old Tombs was abandoned and all the prisoners transferred to the new City Prison Manhattan, erected at a cost of \$4,500,000 and an integral part of a larger unit housing all the Criminal Courts of Manhattan.

The new City Prison Manhattan, representing modern expert thinking concerning prison construction permits complete segregation of the younger offenders; has adequate facilities for medical treatment; and, taken together with all the other services within the institution and with the probation and parole offices in the

adjacent building, facilitates the most effective administration. In the same period, the rehabilitation, amounting almost to reconstruction, of the City Prison Brooklyn was completed, so that similar effective administration can be established there.

The Department accordingly now has practically a complete new physical plant. By the referendum approved by the people at the November election, the control of the Bronx and Richmond County Jails and all work in connection with the transportation of prisoners throughout the city was transferred to the Department of Correction. With the new, rehabilitated, and transferred institutions, the Department will now be able to operate on a city-wide basis and with additional units for transfers permitting better and more economical administration and classification than in the past.

Of equal significance has been the development of personnel. All the employees of the Department are now in the competitive civil service except a few doctors and nurses due to the national shortage in this type of staff. Even in these cases, appointments must be made in accordance with the requirements of the American College of Surgeons. There has been initiated an extensive and very successful in-

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service training course for employees. These courses, conducted in cooperation with the bureau of training of the Municipal Civil Service Commission, will be extended and expanded.

Extensive use has been made of the opportunities and facilities of the institutions to advance professional knowledge and community interests. Among such achievements are notable results obtained in connection with the U. S. Public Health Service; improved methods for the treatment of venereal disease; "socialization" of the Women's Court by extending aid and use of staff and facilities of the House of Detention for Women to cooperative workers with the judges of that court; in placement work leading to better post-institutional adjustment; an expanded industry so that idleness has been abolished and every able-bodied inmate is gainfully employed.

During the year, the Commissioner was absent on military leave, and the Department was headed by Dr. Peter F. Amoroso, First Deputy and Acting Commissioner. At the end of the period, Deputy Commissioner Richard A. McGee resigned his position in the Department to become Supervisor of Institutions in the State of Washington.

POLICE DEPARTMENT

During 1941 the major problem of the Police Department was the continuous preparation for civilian defense. Police Commissioner Valentine was designated as the Police Defense Coordinator for the metropolitan area in June, and the Department immediately began the sizeable task of recruiting and training civilians for defense assignments. Approximately 200,000 air raid wardens have been enrolled by the Department and a major portion have received training and instruction by the Police Department through lectures and discussions conducted by the instructional staff of the Police Academy and through the distribution of various defense handbooks, for example, the *Air Raid Warden Handbook*, *Air Raid Warden Protection Manual*, *Manual of Protection of Plants and Buildings*, *Man-*

ual of Control of Street Lighting, and *Manual of Air Raid Warden Service*.

Despite the size and complexity of these additional defense duties, the Department reported continued improvement in police administration. Among other accomplishments, the Department cites a decrease in motor vehicle accidents in the city despite an increase in the national rate. The Department also cites effective administration in connection with the many meetings and parades during the mayoralty election and the satisfactory handling of the police problems arising out of the combined mayoralty and proportional representation election of councilmen on Nov. 4.

FIRE DEPARTMENT

The fire loss for 1941 was \$9,843,671, an increase of \$206,295 over the previous year.

The Fire Department became in effect a "war department" during the year and started the training of auxiliary firemen in what is officially known as the Fire Department Emergency Auxiliary Corps. Twenty-five thousand men have already been trained and 27,000 are now taking a second course. The minimum quota of 60,000 trained men will shortly be reached, and Fire Commissioner Walsh, who is also the Fire Defense Coordinator for the New York Region, expects in a few months that this corps will number 100,000. These men are between the ages of 18 and 55, and they are trained at the fire houses throughout the city.

In addition, the Department has established a special War Defense School at the Fire College where regular members of the Department were given special instructions in the use and control of explosives and incendiary bombs and in the use of gas masks.

TRANSPORTATION

During 1941, the Board of Transportation opened one new line of the New York City Transit System, substituted omnibuses for trolleys on five surface lines in Brooklyn, and advanced the construction of the extension of the Fulton Street subway in

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Brooklyn and the ramp between the Smith-Ninth Street line of the IND Division and the Culver line of the BMT Division in Brooklyn. In addition, several sections of old elevated lines in New York and Brooklyn were demolished.

The Dyre Avenue-East 174 Street line which the city purchased from the New York, Boston and Westchester Railway in 1940 was placed in revenue operation on May 15, 1941 from East 180 Street and Morris Park Avenue to Dyre Avenue at the city line in the Bronx.

During the year the Board established omnibus routes in substitution

for trolley lines on the DeKalb Avenue, Fulton Street, Putnam Avenue, Hamilton Avenue, Third Avenue, the 15th Street-Erie Basin lines, and the New Lots Avenue line—all in Brooklyn.

During 1941 the demolition of the Second Avenue elevated railroad from 59th Street to the Harlem River, demolition of the Fifth Avenue and the Fulton Street elevated lines in Brooklyn, and the demolition of the Brooklyn end of the Broadway Ferry spur were completed, and contracts were let for the few remaining links of the old elevated railway system in Brooklyn.

CITY POLITICS

By ALFRED WILLOUGHBY

EXECUTIVE SECRETARY, NATIONAL MUNICIPAL LEAGUE

GENERAL

An almost unprecedented tendency to preserve the *status quo* was evidenced by voters in 1941 municipal elections. In general, this was probably due largely to the general preoccupation with international affairs and to the growing awareness that, in time of crisis such as would be provided by our approaching involvement in the war, heavy responsibilities would fall upon local government.

There were two notable exceptions among the larger cities. In the spring elections, normally Democratic St. Louis went Republican, retiring a mayor who had attracted considerable favorable attention by supporting an exhaustive administrative and financial survey of the city's government which was designed to promote efficiency and economy. In the November elections, Cleveland, after remaining Republican throughout the New Deal, elected a Democratic mayor for the first time in eight years.

In the rest of the country's major cities, the people either seemed fairly well satisfied or decided to concentrate on making democracy work on

a world scale and let things take care of themselves at home.

IMPACT OF DEFENSE

The defense program, followed by the formal entrance of the United States into the war, affected cities in many ways. Normal processes of growth and conduct of services were suddenly disrupted in cities which obtained large defense industries or included or were adjacent to military or naval establishments. Financial and planning help from the National Government was provided for those most seriously affected. Virtually all cities, especially the larger ones with any considerable part of their economy involved in industrial production, were affected in some degree, however.

Calls to military and naval service and the demands of industry for persons with special types of training made inroads on city personnel and have made it more difficult to find adequate replacements. Leaves of absence, without loss of priority or retirement benefits, were generally provided, and in some cases funds were appropriated to augment income

losses suffered by volunteers and seeltees.

Rising living costs brought local governments, with comparatively inflexible budgets and revenue, face to face with the problem of increasing the compensation of public employees. This was met in some cases by general raises, in others by bonuses, and in a few places by a system of adjusting pay automatically to the cost-of-living index patterned after the system used for some years in St. Paul.

Public works projects, postponed because of labor and material shortages, became the nucleus and inspiration for orderly post-war planning. A demand was developing for the decrease of local and state debt in order to make the financing of post-war projects easier.

There was an increasing tendency to revamp civilian defense organizations in order to build them around trained city personnel. Special blackout and other ordinances relating to emergency powers were widely adopted. Under pressure of the emergency, considerable progress was made in the development of inter-community cooperation to provide services more economically and efficiently.

MAYORALTY ELECTION IN NEW YORK

A spectacular autumn campaign was waged in New York. To his record of having led the only reform administration ever to succeed itself in the nation's largest city, Mayor F. H. LaGuardia added the distinction of being elected for a third term. His majorities of four and eight years ago were heavily cut, however, due probably, in part, to dissatisfaction with his playing the dual role of mayor and director of the Office of Civilian Defense at Washington and, in part, to bad-tempered campaigning.

The election was unique in that it produced the first occasion on which a President of the United States publicly endorsed one of two rival candidates in a New York City election, or probably any local election.

President Roosevelt endorsed Mayor La Guardia, while most other New York city and state Democratic leaders endorsed his Democratic opponent, District Attorney William O'Dwyer of Brooklyn.

The November election succeeded in shaking off scores of expensive political barnacles when the electorate voted overwhelmingly to amend the city charter "to reorganize county government by abolishing the county offices of sheriff, register, register of deeds, and registrar, creating the offices of city sheriff and city register and assigning the functions of the offices hereby abolished to the city sheriff, the city department of correction, and the city register."

Abolition of these offices and substitution of fewer offices filled by means of competitive examinations have been fought bitterly by New York political organizations which now have been deprived of virtually all their political sinecures. Significant in this connection is the effort under way for the dissolution of the Society of Tammany and the sale of Tammany Hall.

CITY PROPOSALS VOTED UPON

Direct popular legislation, one of the basic safeguards of democratic government, was used during 1941 in 97 municipal elections at which 284 propositions were considered. Of these, 138 were proposed charter changes, 50 were proposed bond-issues, 16 related to tax levies, and 80 were concerned with miscellaneous subjects. Los Angeles voters topped all other cities by acting on 36 measures. In all cities, about 54 per cent of measures submitted were passed. Bond issues were generally approved, while tax levies were largely disapproved.

CIVIL SERVICE EXTENSION

Local politics throughout the State of New York will be profoundly affected by a law (Fite Act) enacted in 1941 which will extend the merit system, under state supervision, to all of the approximately 10,000 units of local government in the nation's most populous state. The law, which provides the most sweeping extension of

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civil service ever accomplished below the Federal Government level, will become fully operative July 1, 1943.

ST. LOUIS, MO.

After a hard fought campaign the voters of St. Louis, Mo., on Sept. 16 adopted two important amendments to its charter: Establishment of a citywide merit system in the civil service and provision for the election of councilmen by wards instead of at large.

ADMINISTRATION CHANGES AND PROPOSALS

During 1941, 18 cities adopted the council-manager form of government, bringing the total number of cities and counties which will use this plan in 1942 to 543. The manager plan was retained in the six communities in which there were votes on the question of abandonment.

The Indiana legislature passed a resolution to amend the constitution giving cities and towns the right to adopt optional forms of government. If the amendment is passed by the next legislature, in 1943, it will be submitted to the voters for adoption. Enabling legislation will be necessary to make the amendment effective.

KANSAS CITY, MO.

Probably the outstanding job of political rehabilitation among cities of the United States was performed by Kansas City, Mo., which for 15 years had been commonly pointed to as the worst failure of the council-manager form of government. Kansas City's opportunity for redemption came in 1940 soon after Boss Tom Pendergast was imprisoned. Under the able, non-political management of City Manager L. P. Cookingham, the city's various departments were scientifically examined during 1941 by outside experts, and most of them have been thoroughly reorganized with a resultant budget reduction of \$1,500,000 which went hand in hand with widespread improvements in services and personnel. The boss-padded city payroll personnel was cut from 7,200 to

3,200. Time honored annual deficits became a cash surplus. The general tax levy was reduced five per cent. Progress has been made in establishing a sound civil service system. Kansas City's accomplishments were termed "a municipal miracle" in an article by Stanley High which appeared in the *National Municipal Review* and in the *Reader's Digest*. In the 1942 spring elections, the first "non-Pendergast" council in many years will stand for re-election, thus giving Kansas City an opportunity to demonstrate whether it has genuinely recovered from its tradition of spoils politics.

YONKERS, N. Y.

In its first year of operation with the council-manager form of government, Yonkers reduced its personal service budget more than \$1,000,000. In the November 1941 election the removal of the incumbent city manager was made an issue by the reform forces on the claim that he had been subservient to political influences. Three of the five councilmen elected were pledged to obtain a new manager, but at the year's end one of these aligned himself with the two representatives of the major political organization, was elected mayor, and recanted his pledge to fire the manager.

SUPERIOR, WIS.

Superior, which in 1940 was widely publicized as the 500th city to adopt the council-manager form of government, put that plan in operation in April 1941 with the overwhelming election to the city council of seven political neophytes who were supported by the reform elements. The new council obtained from a smaller city a city manager who, in his first few months, made a creditable record for the elimination of waste, improving services, reorganizing various departments, and conducting a campaign to improve the physical appearance of the city.

MONTCLAIR, N. J.

In Montclair, the members of the city commission sought to overcome

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the weaknesses of this form of government by having all commissioners appoint the same man as executive assistant of their respective departments, thus concentrating in one individual the job of executive secretary of the commission. It was explained as an effort to "reap whatever benefits can accrue from a city manager plan while still operating within the framework of a commission form of government."

CAMBRIDGE, MASS.

Cambridge became the first city in the United States to elect its board of education by the proportional representation method of voting. The city also elected its first proportional representation city council, and at the year's end it began operation under the council-manager form of government. In connection with the new charter a court decision validated the use of proportional representation in Massachusetts.

FUNCTIONS AND TYPES OF MUNICIPAL GOVERNMENT

By CLINTON ROGERS WOODRUFF
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U. S. CONFERENCE OF MAYORS MEETING

Attended by approximately 400 municipal officials from all states lying between the Alleghenies and the Rockies, the United States Conference of Mayors held an important regional meeting in St. Louis, Feb. 21, 1941. Resolutions adopted at the meeting included a proclamation on national defense and advocacy of more effective cooperation with Canada and the Pan-American republics. A resolution was also adopted requesting the War Department to establish an Advisory Committee for Civil Defense of Cities, as an aid towards carrying out the recommendations on civil defense presented to President Roosevelt by the Conference.

THE CITIES AND NATIONAL DEFENSE

The most important development in the field of Police Administration during the year in California was the emphasis placed upon training for co-operation in the Civilian Defense Program. This training has been carried on by the national government under the direction of J. Edgar Hoover of the Federal Bureau of Investigation as well as the individual departments throughout the country.

According to the American Munic-

ipal Association in a report entitled "Cities and the National Defense Program," the impact of the program is having a tremendous effect on the machinery of municipal government. Viewing the situation as of May, 1941, the Association pointed out that city officials are now aware of two "fundamental facts": (1) that, while defense of the nation is a responsibility of the Federal Government, effective operation is "in large part an urban task" because defense industries must be in or near cities and require city services; (2) that the Federal Government has begun to recognize the urban character of the defense program and is gradually assuming the responsibility of aiding cities in providing services to most defense needs.

Between 250 and 400 cities have become "boom towns" because of defense industries or proximity to military posts. In the typical boom city, telephone business has gone up 200 per cent, water consumption increased 10,000,000 gallons, and trailer camps of new workers have sprung up to cope with the lack of housing. These are the cities which the National Government is taking special steps to help by building public housing, by constructing streets and utilities with WPA labor, by offering military police aid, and other measures. On April 20,

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for example, 77,435 dwelling units in 141 localities in 47 states were constructed as defense housing at a cost of \$477,000,000.

Typical effects of defense activity and resultant action in the non-defense-connected cities as of May 1, 1941, were cited as follows:

1. Where personnel was depleted by employees going into military service, vacancies either were not filled at all as in the case of New York City, or temporary appointments were being made, on condition that the jobs would go back to the original incumbents when they returned. Some cities had provided for making up the difference between military and civilian pay to their employees in service.

2. Local police powers had been broadened in a large proportion of the states by legislation on sabotage, espionage, and "fresh pursuit." Emergency police mobilization plans, developed first in New York, Virginia, and New Jersey to include legal and state forces, were under study in a dozen other states. Local police and fire forces had not been seriously depleted because of the draft.

3. Municipal fire departments in several states, following the example of Maryland's fire defense plan, were being inventoried in an attempt to record all fire-fighting resources for general information and were asked to acquaint themselves with industrial hazards in their locality.

4. Local health officers were working with Federal and state officials toward control of venereal disease by early diagnosis, treatment, and report of cases among both civilians and soldiers.

5. More than 800 of the 900 cities with vocational, trade, and industrial schools were making facilities for defense training. Over 300 cities had their schools on a 24-hour, six-day week and were planning to train 2,000,000 people.

6. Nine hundred flying schools under direction of the Civil Aeronautics Administration were under way, many of them at municipal airports, which were profiting in terms of operating revenues. Municipal airports them-

selves were being fitted for greater use by improvements financed by the Federal Government.

7. Civilians were participating in municipal "home guards" under state supervision. These home defense units are organized to perform guard duty for utilities, power plants, docks, railroad yards, etc. in any emergency.

8. The decentralization of industry and practice of subcontracting defense contracts recommended by the Federal Government was leading cities not previously "defense-connected" to analyze problems of housing, training, and placement of prospective labor in larger numbers.

9. Miscellaneous activities included trial blackouts in at least two cities (Seattle and Pittsburgh); building of bomb taxis (Newark and Bridgeport); training of auxiliary fire-fighters (Boston); and protection against sabotage of water and power supply (Los Angeles).

Facilities of all cities such as highways, communications, water and power supply are being correlated into nation-wide "spot maps" by special committees appointed by the Federal Government to centralize all information pertinent to defense of the country and to direct its organization.

THE SOLDIER AND MUNICIPAL LAWS

When a soldier goes to town and drives through a red light, the question arises who has authority to arrest and punish him: the local police and courts or military officials? In time of war, the military authorities have prior claim to prosecute and punish an offender except in the case of murder, when both civil and military courts have concurrent jurisdiction, the American Municipal Association points out in a study that it has made, but in peace time, civil police authority takes precedence over military authority, although the military also may prosecute. The place where the law was broken will in general dictate who makes the arrest. A soldier who breaks a civil law on the military reservation is taken care of by the military authorities, unless the crime

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is rape or murder. When he is in the city, it is the duty of the civil police to apprehend him if he commits a crime. However, civil authorities may and often do seek the aid of the military in enforcing the law. Some small cities, whose police forces already have been supplemented by military police aid, report satisfaction with such a plan.

This study advises city police to cooperate closely with military officials on the matter of law enforcement and service men. In the case of minor offenses, recommendation is made that arrest by military authorities be arranged if possible "without inconvenience and delay." Where this would not be practical, "arrangements should be made to turn the offender over as soon as possible after arrest to military authorities for punishment," the study says. This procedure, it is pointed out, aids discipline by keeping control of soldiers in the hands of officers. In other cases, as soon as the offender has been arrested, the advice of his organization commander should be sought before decision is made whether the trial should be in the civil courts or by military authorities. Regardless of the nature of the offense, "when civil authorities find it necessary to detain a soldier or sailor, they should immediately inform the authorities of the soldier's post."

EXTENSION OF CITIES' POWERS

In several states action has been taken to extend the power of cities to cooperate with other governmental units. Oregon gave cities power to cooperate with other public agencies in a joint provision of services, gave cities permission to consolidate even when not contiguous, as well as power to annex unincorporated territory even if it is not adjacent to the city. Eight other states extended powers to establish fire districts with which cities might cooperate and gave cities power to fight fires outside their limits. These states were Colorado, Idaho, Michigan, Missouri, New Jersey, North Carolina, Texas, and Washington. California, partially as a defense measure but not limited to that objec-

tive, authorized all political subdivisions to render any service outside their own limits in case of fire, disaster, or other emergency. Maine gave cities and towns power to supply electricity to cooperative organizations by contact, while in South Dakota municipal water works may sell water outside their limits, and Washington gave cities power to supply sewer service outside the city limits. New Jersey granted cities further power for the joint performance of certain activities.

Among new powers granted to cities was authority to own and operate municipal off-street parking lots in California, Iowa, Kansas, Maine, and North Carolina. The last-named state also authorized cities of 20,000 or more to install and operate parking meters. Maine gave cities power to license the operation of automobile junk-yards. Florida gave cities and counties power to acquire and maintain forest lands; Idaho and Illinois authorized the adoption of codes by reference; Texas permitted cities of 10,000 or more to adopt civil and criminal ordinance codes without publication; Missouri and New Hampshire authorized cities to provide public housing; and Missouri, Utah and Wisconsin gave cities new zoning powers.

CITY WORKING HOURS AND CONDITIONS

The Los Angeles city council has adopted an ordinance establishing a five-day or 40-hour week for all city employees except police and firemen. The five-day week had been in effect in most departments since February 1937, replacing the previous 44-hour week, but did not apply to civilian employees in the fire and police departments and employees of the health department and a hospital. The new ordinance provides that all offices of the city shall be closed on Saturday except those of the bureau of assessments, city attorneys, city clerk, civil service, controller, treasurer, and the public office of the department of public works. These offices shall remain open on Saturday morning with only such personnel re-

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quired to be present as may be necessary to accept service of process and papers and documents which are presented for filing. Employees may be required by the administrative head of a department or bureau to work in excess of eight hours on any day, or in excess of 40 hours during any week, provided such employees be allowed equivalent time off within one year. The ordinance also provides that a record of all overtime be kept and also a corresponding record of time less than eight hours per working day worked so that time off may be deducted from overtime credits if any.

RETIREMENT SYSTEMS FOR MUNICIPAL EMPLOYEES

Municipal Retirement systems are operated for the benefit of city employees in more than 65 per cent of all cities over 10,000 population in the United States, the International City Managers Association reports. The report, based on a survey of the 1,072 cities over 10,000 population, does not include retirement systems for school employees. Of the 981 cities answering the Association's questionnaire, 687 reported retirement systems, with all classes of permanent employees except elected officials covered in more than a third. The percentage of cities having all classes of employees covered varies directly with the size of the city, with one exception: cities of 100,000 to 200,000 population have a slightly higher per cent coverage than those in the 200,000-500,000 group.

Retirement systems of 13 of the country's 14 largest cities (those with populations over 500,000) cover all classes of employees, including police and firemen and other workers. St. Louis, the other city, covers only police and firemen. On the other hand, 21 per cent of the 590 reporting cities between 10,000 and 25,000 population, reported they had retirement systems covering all municipal employees. Police and firemen only are covered by systems in 127 cities, firemen in 54 cities, and police in 37 cities. The other reporting cities have no retirement systems. The percentage of

cities having some classes covered varies much less among the several population groups, the Association states, as a result of the tendency of smaller cities to have systems for police and firemen when the rest are not covered. In cities below 100,000, systems covering police and firemen are more common than systems covering all employees.

LEGISLATION

According to *Public Management*, there cannot be said to be any special trend indicated by the legislation adopted relating to municipalities and their problems during the year. Some measures were featured by the adoption of acts relating to national defense and applying to activities of cities and towns and by the recognition of the financial needs of cities in granting a share of certain centrally collected taxes to them in several states. Most of the sessions were featured by the absence, with a few exceptions, of measures that will be harmful to municipal government. Attempts were made in several instances to impose new and additional burdens upon cities. Bills were unsuccessfully proposed in Arizona to take from cities the control of plumbing and the licensing and regulation of restaurants; to prohibit the adoption of the Green River type of ordinances in Colorado, where the ordinance has been upheld by the court; to impose a tax on municipal, electrical utilities and to place the regulation of all electricians, electrical employees, and electric wiring under the control of the organized electrical workers in Tennessee; and a prohibition of parking meters, the abolition of all immunity from liability of cities, and permission to recover even where the injured party was guilty of contributory negligence in the State of Washington. It was notable that organized municipal employee groups made such insistent demands for the enactment of special favors in the form of minimum wages, maximum hours, time off, demands for discriminatory pensions and other similar special favors that the cities were forced to intercede, to

oppose their own employees in many cases, and the legislatures balked at putting these burdens on the taxpayers of their communities.

MUNICIPAL FINANCE

A downward trend in per capita municipal debt of cities over 30,000 population, first noticed in 1935, has continued through 1941. Between 1940 and 1941, per capita gross debt of 234 cities of over 30,000 population has decreased from \$146.37 to \$142.59 and per capita net debt (exclusive of utilities) from \$93.45 to \$90.40.

In the State of Washington, cities have been authorized under a new law to accumulate a reserve fund for any municipal purpose, including that of buying specific supplies, material, or equipment, or for the construction of any public improvement. The monies in the fund may be allowed to accumulate from year to year, and an item for such a fund may be included in the annual budget. Cities, villages and first-class towns in New York State are authorized to create and maintain capital reserve funds for financing the cost of capital improvements and certain types of equipment, rather than to issue bonds.

Finance officers of cities, both large and small, are developing manuals to train their staffs and make procedures uniform. In Portland, Ore., the City Auditor has written a complete accounting manual for his office, and in Rayne, La., a town of 5,000, a manual of procedure was developed preliminary to setting up a complete mechanical accounting system. Faced with the necessity of breaking in new help on the city's books, the auditor of Kalamazoo, Mich. recently developed complete statements of the operation of each fund and the explanation of the more important accounts. In Grosse Pointe Park, Mich., a budget procedural manual describes the department and activity classification to be used, and includes an assessment, budget, and tax calendar for the year.

President Roosevelt signed a Municipal Bankruptcy Act by which approximately 1,500 cities in this country

will be authorized to take advantage of this new measure, which makes it possible for local authorities, with the consent of creditors, to adjust their debts until June, 1942. There appear to be fewer authorities struggling with debt default than was the case five years ago, but at the beginning of February, 1941, according to a survey, there were no fewer than 730 cities and societies in default. Six hundred school districts and over 130 other districts—water sanitation, etc.,—were also listed as being in arrears with their bonded debt payments, although it is believed that the actual number is probably much larger. As late as 1938, it was estimated that 3,100 local authorities—about two per cent of all the units in the United States—were in default. Not all defaulting authorities settle their difficulties by applying the Bankruptcy Act. A number of them have taken advantage of the favorable interest rates on bonds, and have provided for refundings and re-adjustments.

FIRE PROTECTION

Enactment of laws by six states this year brought to 15 the number of states establishing strict fireworks control on a statewide basis. The new states are Arizona, Illinois, Maryland, Minnesota, Ohio, Florida; the others are New York, Delaware, Indiana, Iowa, Michigan, New Jersey, Pennsylvania, Utah, and West Virginia. These laws, based on a model drafted by the National Fire Protection Association in 1938, provide for properly supervised public displays operated under permit. Sale of fireworks for private use, or for other than supervised display purposes, is practically prohibited. Evidence from several states indicates sharp reductions in accidents from fireworks as a result of the legislation.

The League of Oregon Cities has completed a study of fire insurance rates and losses in city-owned property. It was disclosed that in 97 cities the fire losses in municipal buildings for a period of five years had totaled only 7.15 per cent of the premium payments. The Oregon Insurance

V. MUNICIPAL GOVERNMENT

Rating Bureau announced that it is preparing a new schedule that will result in substantial reductions in premium costs for fire insurance on municipal buildings.

Hartford, Conn. won the Grand Award in the 1940 National Fire Waste Contest, among more than 300 cities competing. The winning cities in each of six population groups which will receive bronze plaques at the annual meeting of the Chamber of Commerce of the United States in Washington on April 28, 1942 are: Philadelphia, Providence, Hartford, Lakewood (Ohio), Parkersburg and Salisbury (North Carolina). Cities were given credit for fire loss records, educational activities in fire prevention, and permanent improvements to eliminate fire hazards. The 300 cities reporting in the contest had a per capita fire loss of \$1.66 for the year 1940, as compared with an average per capita of about \$2.00 for the country as a whole.

SMOKE ABATEMENT

In 1940 increased interest in smoke abatement followed the adoption by St. Louis of what is probably the most rigid smoke elimination ordinance of any large industrial city. Salt Lake City has adopted a similar ordinance; about 150 cities now have smoke abatement ordinances. St. Louis requires the use of either smokeless fuel or mechanical firing equipment which will burn fuel smokelessly. The city is authorized to enter the coal business whenever there is not an adequate supply of smokeless coal available at a reasonable price.

Prior to the adoption of the ordinance a committee appointed by the mayor of St. Louis reported that smoke had caused millions of dollars of losses in property values and increased electricity bills about \$1,000,000 annually. These costs, together with the serious menace to health and living conditions generally, made smoke the greatest cause of the large exodus of population to outlying areas. Proposed solutions included education as to proper methods of stoking and burning coal, subsidies to

consumers to enable them to buy higher priced treated fuels, universal use of natural gas, district heating, and a municipally owned gas or coke plant. These were rejected in favor of the ordinance provisions already cited, on the grounds that the latter would require the least capital expenditures by the city and the consumers and would be the best solution for home and apartment building owners. Those able to purchase mechanical stoking equipment would probably gain in the long run through economical use of fuel. Less fortunate coal users would have to pay a higher price for fuel, but this cost is not considered burdensome: because (1) coke yields 25 to 50 per cent more heat than the same weight of bituminous coal; (2) the large demand for processed coal will reduce considerably the present wide spread between the prices of bituminous and processed coal; (3) St. Louis is already paying less for coal than do 19 other large cities; (4) the economic costs of the present situation will be largely eliminated as the objectives of the ordinance are achieved within a few years.

Cleveland has inaugurated a long-range educational program by a smoke-inspection flight in a large transport plane in which city officials were accompanied by newspapermen and photographers. A permanent committee has been appointed, and educational and enforcement activities will be facilitated by regular use of a small private plane with radio communication to mobile units on the ground.

NOISE ABATEMENT

Noise abatement formerly meant silencing automobile horns and loudspeakers. The movement has now been extended to include the subtle inside office and home noises as well as the unnecessary raucous sounds of the streets. The war is on against clacking typewriters, footsteps resounding on wooden floors, partitions that let the drones and barks of conferences filter through. Materials and devices are available to dampen all

PERIODICAL PUBLICATIONS

these and many other nerve-wrackers. The National Noise Abatement Council held a meeting in New York City on Oct. 23, 1941.

CHICAGO'S RAT WAR

Chicago waged a war on 5,000,000 rats. It was the most thorough in the history of the city, 1,800 WPA employees spreading poison fatal to rodents through 29 of Chicago's 50 wards. The drive, which was the second step of an extermination program, ended in March, 1941. It was directed against the 5,000,000 rats that were estimated to cause \$7,000,000 damage a year to Chicago buildings and other properties and to menace seriously the health of the city. The first step in the program was to have buildings and homes obtain metal garbage containers with tight-fitting lids. Pamphlets describing rat-control were distributed, and city officials and employees visited homes and building owners to explain the campaign and ask cooperation. As a result, the number of buildings without containers has been reduced from 96,000 to 18,000 of the 385,000 served by garbage collectors. City officials say more than \$85,000 has been spent on refuse containers since September, 1939.

Crews started spreading rat poison early in September, 1940, in streets, alleys and back yards of three wards, which were the first to report a 100 per cent usage of refuse containers by building and home owners. As the number of wards with complete container protection increased to 29, the number of crews was increased. It took a crew from five to eight days to work through a ward, and in carrying out the program, each ward was covered three times by March. By that time areas with high rat infestation, along the river-front and in slum areas were determined, and exterminator crews concentrated their efforts on those areas. The poison was purchased with money from a fund appropriated for the campaign by the city.

In spreading the poison, which is a slow-action type, allowing rats to return to their holes to die, exterminator crews followed closely behind refuse-collection trucks. Bait was placed beside containers and rat-holes. After the poison had been spread for several days, the crews filled all rat-holes with dirt. When new holes were found, more poison was spread, and the holes were filled or refilled. This procedure was followed until there were no rats in evidence.

PERIODICAL PUBLICATIONS

American City
470 Fourth Ave., New York City.

Insured Mortgage Portfolio
Federal Housing Administration,
Washington, D.C.

Municipal Finance
1313 East 60th Street, Chicago.

Municipal Sanitation
24 West 40th Street, New York
City.

National Municipal Review
309 East 34th Street, New York
City.

Public Management
1313 East 60th Street, Chicago.

Public Works
310 East 45th Street, New York
City.

Sewage Works Journal
654 Madison Ave., New York City.

Water Works and Sewerage
330 S. Wells Street, Chicago.

V. MUNICIPAL GOVERNMENT

COGNATE SOCIETIES AND RESEARCH INSTITUTIONS

(For further information, the reader may address the following organizations)

AMERICAN CIVIC ASSN., 901 Union Trust Bldg., Washington, D.C.	INTERNATIONAL CITY MANAGERS' ASSN., 1313 E. 60th St., Chicago, Ill.
AMERICAN LEGISLATORS' ASSN., 1313 E. 60th St., Chicago, Ill.	NATIONAL CIVIC FEDERATION, 45 East 34th Street, New York City.
AMERICAN MUNICIPAL ASSN., 1313 E. 60th St., Chicago, Ill.	NATIONAL CIVIL SERVICE REFORM LEAGUE, 521 Fifth Ave., New York City.
AMERICAN PUBLIC WORKS ASSN., 850 East 58th Street, Chicago.	NATIONAL MUNICIPAL LEAGUE, 299 Broadway, New York City.
GOVERNMENTAL RESEARCH ASSN., 1313 East 60th St., Chicago, Ill.	UNITED STATES CONFERENCE OF MAYORS, 730 Jackson Pl., N.W., Washington, D.C.
INSTITUTE OF PUBLIC ADMINISTRATION, 261 Broadway, New York City.	

DIVISION VI

TERRITORIES AND SPHERES OF AMERICAN INFLUENCE

ALASKA

BY ERNEST GRUENING
GOVERNOR, TERRITORY OF ALASKA

NATIONAL DEFENSE

The most important developments during the year ended June 30, 1941, as in the preceding year, were related to national defense—or offense. All the Army and Navy bases which were under construction in 1940 have been vastly enlarged, additional bases have been created, and still others are in process of construction. World events have brought home the strategic position of Alaska—lying along the Great Circle Route, the shortest route to the Orient—and the nearness of Alaska bases for offensive purposes to the Far East.

FOREIGN TRADE

During the fiscal year ended June 30, 1941, commerce between Alaska and the United States decreased \$2,092,077, while the value of shipments from the States to Alaska increased \$16,452,035. The balance of trade in favor of Alaska was \$874,637, an increase of \$18,744,112 from the previous year. While shipments of fish products, mainly canned salmon, to the United States decreased \$915,914 from the previous year, the yield was normal, aggregating in value \$34,450,934, the reduction in value being due to a lowered market value of these commodities. Shipments of fur skins to the United States totaled \$2,565,414, a decrease of \$278,848 from the previous year. Shipments of gold amounted to

\$20,410,755, a decrease of \$541,042 compared with 1940. Tourist travel continued to increase and many defense workers came to the Territory, so that during the summer all ships plying Alaska waters carried capacity loads.

FINANCE

Cash on hand in the Territorial treasury Jan. 1, 1940 amounted to \$816,108.24 as compared with \$877,112.82 the previous year. The combined resources of territorial and national banks at close of business June 30, 1941 were approximately as follows: capital, \$985,000; surplus and undivided profits, \$1,382,482.82; deposits, \$22,355,761.72. Totals for the previous year were: capital, \$910,000; surplus and undivided profits, \$1,250,339.36; deposits, \$17,148,552.26.

FISHERIES

The total value of the Alaska fishery products in 1940 was \$36,440,660, a decrease of \$3,663,833 from the preceding year which in turn had shown a decrease of \$2,765,233 from the year 1938, a drop in two years of \$6,429,066. While the volume of salmon products increased in 1940 over 1939, the value decreased due to a lowered market. Halibut, shrimp, and clam products increased both in volume and value. Cod decreased both in volume and value. Crab increased in quantity but decreased in

VI. TERRITORIES AND SPHERES OF AMERICAN INFLUENCE

value. The total number of salmon of all kinds taken in 1940 was 85,854,483 as against 79,220,420 in 1939. The number of cases packed was 5,069,343, valued at \$31,474,492, as compared with 5,263,153 cases valued at \$34,441,082 in 1939. One hundred canneries were operating, nine less than in 1939, and the number of persons employed decreased from 24,921 to 19,666. Twenty-four herring plants operated, being three more than in the preceding year, and the number of employees decreased from 1,060 to 737. The total value of these products was \$1,258,071 as compared with \$2,090,473 in 1939. The halibut industry employed 1,009 persons as compared with 710 in 1939. The value of halibut landings at Alaskan ports totaled \$758,882 as compared with \$412,963 in 1939.

FURS

A total of 65,263 fur-seal skins was taken in the Pribilof Islands operations in 1940, an increase of 4,790 over 1939 which recorded an increase of 2,109 over 1938. Killings were from three-year-old male seals. Computations as of Aug. 10, 1940 showed 2,185,136 seals of all ages and classes in the Pribilof Islands herd, an increase of 164,362 over 1939, which had shown an increase of 148,336 over 1938. This herd has steadily increased since 1910, when there were but 132,000 seals. During the fiscal year ended June 30, 1941, two public auction sales of fur-seal skins were held by the Fouke Fur Co. at St. Louis during which 64,147 skins were disposed of. Gross receipts from these sales, together with an additional 198 skins sold at special sales, were \$1,634,783.69. Also 1,246 blue fox skins were sold for \$16,247 and 12 white fox skins for \$108. In the 1940-41 season, 640 blue and 11 white fox skins were taken on the two islands

MINERALS

The total value of mineral products in Alaska since 1880, when records were first kept, to the end of 1940 was \$831,584,000. Alaska mines produced \$28,470,000 worth of minerals

in 1940 as compared with \$25,296,000 in 1939. In 1940 the output of gold from both lode and placer mines was \$26,178,000, an increase of \$2,899 over 1939. About 65 per cent of this output came from lodes in southeastern Alaska. The production of all platinum metals in 1940 was 28,886 ounces valued at \$1,093,000 as compared with 27,230 ounces worth \$997,000 in 1939, placing Alaska well upon the list of countries producing these metals. Tin ore deposits in Alaska, mainly in Seward Peninsula, yielded in 1940 104,000 pounds worth \$52,000 compared with 74,000 pounds worth \$37,300 in 1939. Coal to the value of \$695,000 was produced in 1940 from Alaska mines, principally the Matanuska and Healy River fields. In quantity, the output was 173,970 tons, which is the largest amount of coal produced by Alaska mines in any year. In addition 16,068 tons of coal were imported, indicating a domestic consumption for the year of about 196,400 tons.

ALASKA RAILROAD

The number of rail line passengers carried was 43,292, an increase of 13,782 from the previous year. Rail line freight traffic amounted to 207,362 tons, an increase of 12,895 from 1939. Of the total freight, 153,933 tons consisted of coal.

AVIATION

With rapid strides, commercial aviation is becoming one of the major factors in the industrial life of Alaska. From one experimental air mail contract 15 years ago it has developed into the present 200 modern planes serving nearly all Alaska. The number of planes increased 25 over the preceding year. The number of passengers during the fiscal year ended June 30, 1941 totaled 41,703; passenger miles flown, 7,918,054; mail and freight carried, 5,558,938 pounds.

EDUCATION

The territorial public schools in Alaska for the education of white and mixed-blood children, including both elementary and high schools, are

under general supervision of a Territorial Board of Education, with the Commissioner of Education as executive officer. Schools are supported largely by territorial appropriations, augmented for rural schools by 25% of the Alaska Fund which is derived from a variety of Federal taxes collected in the Territory, and for schools within incorporated towns by local taxation to an extent of 20% to 30% of their operating costs. Four-year high schools, accredited by the Northwest Association of Secondary and Higher Schools, are maintained at Anchorage, Cordova, Douglas, Fairbanks, Juneau, Ketchikan, Nome, Petersburg, Seward, Sitka, Skagway, and Wrangell, as well as the rural high school at Palmer and the Sheldon Jackson School at Sitka. Non-accredited high schools are maintained at Haines and Nenana. Graduation from a three-year standard normal school or its equivalent is a prerequisite for the Alaska elementary teacher's certificate. High school teachers must be graduates of standard four-year colleges and have completed a minimum of 15 semester-hours in education.

At the 19th annual commencement of the University of Alaska, 37 degrees were conferred covering courses in agriculture, civil engineering, education, history and political science, English, secretarial training, commercial education and metallurgic engineering, general science, home economics, and mining engineering. In addition to an enrollment of 310 regular students for the year, 681 enrolled in short courses.

Agricultural Experiment Stations are maintained at the University and in Matanuska Valley and at Petersburg where an Experimental Fur Farm has been established. An Extension Service serves the territory

with five workers. In addition, the Office of Indian Affairs maintained two vocational high schools and 116 elementary schools, which serve also as community centers for the Indians and Eskimos. Programs of study for the schools vary greatly, being based upon the needs and abilities of the individual communities and the extent to which white culture has been adopted. Regular teachers of this Office are subject to the Civil Service rules and regulations. Minimum qualifications require graduation from a three-year teacher's training school or a University bachelor's degree, and two years experience. Increased development of native arts and crafts is an integral part of the program. A total of 187 teachers, with 76 Indian apprentice assistants, taught 6,900 pupils during 1940-41.

REINDEER

The Reindeer Service field headquarters are situated at Nome. A General Reindeer Supervisor provides general field supervision of reindeer work, being directly responsible therefore to the General Superintendent of the Indian Service at Juneau. The reindeer country is divided into six administrative units, each under supervision of a unit manager familiar with policies and field work. Local supervision of reindeer activities is provided at 43 villages by Indian Service teachers, who report direct to unit managers. The Reindeer Service appropriation totaled \$75,000 in 1941. Approximately 205,000 reindeer are in Alaska, of which natives own an estimated 161,000 and the government 44,000. These animals graze 56 ranges on the west coast between Kodiak Island and the Arctic rim east of Barrow. The area comprises 166,000 square miles, about the size of California.

VI. TERRITORIES AND SPHERES OF AMERICAN INFLUENCE

HAWAII*

By JOSEPH B. POINDEXTER
GOVERNOR OF THE TERRITORY OF HAWAII

GOVERNMENT

Of the 21 islands in the Hawaiian archipelago, eight are inhabited. During the greater part of the nineteenth century the islands formed an independent kingdom, but in 1893 the reigning Queen, Liliuokalani, was deposed and a provisional form of government set up. In 1894 a republic was proclaimed. Pursuant to the request of the people of Hawaii, expressed through the Legislature of the Republic, and a resolution of the United States Congress approved July 7, 1898, the islands were formally annexed to the United States on Aug. 12, 1898. The Organic Act under which Hawaii is governed was approved April 30, 1900, since which date the Hawaiian Islands have been functioning as a full-fledged territory and an integral part of the United States.

Executive power is vested in the Governor, who is appointed by the President by and with the advice and consent of the Senate of the United States. The Hawaiian Organic Act provides that, in order to be eligible for appointment to the office of Governor of Hawaii, one shall have resided in Hawaii for at least three years next preceding appointment. The Secretary of the Territory, who becomes Acting Governor during the illness or in the absence from the Territory of the Governor, is also appointed by the President by and with the advice and consent of the Senate. There is a Legislature of two houses, a Senate of 15 members elected for terms of four years and a House of Representatives of 30 members elected for terms of two years.

Hawaii is represented in Congress

* This review by the Governor of the Territory of Hawaii was necessarily written before the Japanese attack. For Hawaii in the war, see "The United States and Japan," page 78. Ed.

by a Delegate, elected biennially. He has the right to debate and may be a member of committees of the House of Representatives but has no vote.

AREA AND POPULATION

For administrative purposes the Territory is divided into five counties as follows: City and County of Honolulu, comprising the Island of Oahu (area 604 sq. m., estimated population 1941, 310,503); County of Hawaii, comprising the Island of Hawaii (area 4030 sq. m., population 68,398); County of Maui, comprising the Islands of Maui, Lanai, Kahoolawe, and all of Molokai except the leper settlement (area 1164 sq. m., population 52,495); County of Kauai, comprising the Islands of Kauai and Niihau (area 627 sq. m., population 33,479); and Kalawao, administered by the Board of Hospitals and Settlement (area 13 sq. m., population 464). The total area is 6,435 sq. m., population 465,339. The principal cities are Honolulu, the capital, situated on the Island of Oahu, population 200,158, and Hilo, on the Island of Hawaii, 22,667.

COMMERCE

Hawaii's imports and exports during 1940 showed a big increase over the previous year. The value of shipments to the mainland United States from Hawaii was \$102,145,130 and to foreign countries \$922,335. Imports from the mainland United States amounted to \$127,439,539 and from foreign countries, \$7,999,062, total imports and exports amounting to \$238,506,066, an increase over 1939 of more than \$14,000,000.

The principal items exported to the mainland United States were sugar, raw and refined, \$47,266,417; canned pineapples and pineapple juice, \$45,899,359; coffee \$517,066; molasses \$647,116.

Internal revenue receipts for the

HAWAII

fiscal year ended June 30, 1941, amounted to \$13,763,998, an increase over the previous year of more than \$4,000,000.

SUGAR

Benefit payments on sugar produced in Hawaii in 1940 from the Agricultural Adjustment Administration were made to more than 2,000 producers, and totaled approximately \$8,851,541, a slight increase over the previous year.

In addition, payments under the Soil Conservation and Domestic Allotment Act and the Agricultural Adjustment Act of 1938, were made in the calendar year 1940 to 1,060 participating farmers in the Territory, which totaled \$107,934 for adopting practices designed to retard soil erosion and to improve soil fertility.

The Sugar Act of 1937 provides for quota restriction of sugar deliveries from all sources supplying the continental market in order to maintain a satisfactory domestic price level in view of abnormal low world sugar prices. In addition, payments are made to producers of sugar crops on the conditions, among others, that child labor be eliminated from the production of these crops, and that fair and reasonable wages be paid to those employed in the production of such crops.

The amount of sugar which may be produced in the Territory in 1941 is approximately 1,030,587 short tons, raw value. Of this amount, approximately 1,000,177 tons may be delivered to the mainland market and 30,410 tons may be sold locally. The difference between the amount which may be produced and that which may be sold provides a normal reserve.

PINEAPPLE INDUSTRY

The movement of canned pineapple and pineapple juice continued heavy during the past year, reflecting the sound, steady growth of this important part of the Hawaiian economy. The comparative data for the last five calendar years as shown by Depart-

ment of Commerce records, are as follows:

Years	Canned Pineapple	Canned Pineapple Juice
1936.....	\$39,415,576	\$12,738,333
1937.....	43,505,918	16,879,007
1938.....	25,056,257	13,353,195
1939.....	34,715,119	16,942,907
1940.....	27,902,645	18,030,980

Employment in the industry continued at a high level. Wages were twice substantially increased during the year.

The industry is taking an active part in assisting with civilian defense activities, particularly in its cooperation with Federal and Territorial agencies in preparing for the production of an augmented local food supply. Under the guidance of the chairman of the Pineapple Producers Cooperative Association's Emergency Food Committee, outstanding work has been done in preparing for vegetable production when and if an emergency occurs. It has been of great advantage to the defense work of the Territory to have available the well organized industries of pineapple and sugar to which to turn for efficient assistance.

Foreign competition of pineapple grown in Japan, Cuba, and Malaya continued to increase. Imports from Japan alone increased from 359,764 cases in 1939 to 472,006 cases in 1940, and total imports from foreign countries amounted to 814,952 cases.

FINANCES

The cash balances of all Territorial funds amounted to \$19,606,277.99, as compared with \$14,453,577.29 on June 30, 1940, an increase of \$5,152,700.70 or 35.65%.

Securities held by the Treasury department as custodian amounted to \$36,452,191.83 par value, compared with \$35,274,101.20 on June 30, 1940, an increase of \$1,178,090.63 or 3.34%. Said custodianship consists of territorial investments, securities pledged by banks for territorial and counties' funds on deposit and securities re-

VI. TERRITORIES AND SPHERES OF AMERICAN INFLUENCE

quired by law of insurance companies, mutual and fraternal benefit societies, building and loan associations, and employers defined in the Workmen's Compensation Law.

The gross bonded indebtedness outstanding amounted to \$36,539,000, as compared with \$38,288,000 outstanding on June 30, 1940, a decrease of \$1,749,000, the amount of principal of public improvement serial bonds matured during the fiscal year, of which \$1,743,000 were presented for payment and retired. The net bonded indebtedness, after the deduction of sinking fund assets of \$11,039,552.18, amounted to \$25,499,447.82, as compared with \$27,334,831.33 on June 30, 1940, a decrease of \$1,835,383.51 or 6.71%. During the fiscal year, 4½% public improvement term bonds dated Sept. 15, 1920, Dec. 15, 1920, and Dec. 31, 1920, due in 1950, were called for redemption and refunded by 2½% serial bonds in the amounts of \$2,400,000 and \$800,000 issued on Nov. 1, 1940 and Jan. 6, 1941, respectively.

The net assessed valuation of real property for the calendar year, 1941, totaled \$188,055,642, as compared with \$183,048,303 for the year, 1940, an increase of \$5,007,339 or 2.73%. The tax rate per \$1000 assessed valuation for 1941 was established for the City and County of Honolulu at \$29.10, for the County of Maui, \$37.18, for

the County of Hawaii, \$42.70, and for the County of Kauai, \$36.36.

The net assessed valuation of personal property for the calendar year, 1941, totaled \$94,910,426, as compared with \$90,404,264 for the year, 1940, an increase of \$4,506,162 or 4.98%.

Total deposits in the seven banks operating 30 branches in Hawaii on June 30, 1941, amounted to \$152,761,639.47, as compared with \$123,296,267.74 on June 30, 1940, an increase of \$29,465,371.73.

The huge defense program in the Islands, particularly on the Island of Oahu, with the "importation" of many thousands of workers from the mainland, has resulted in boom times for Hawaii.

The population of the Islands increased by 9.4% during the past year. On the Island of Oahu, the increase was 19%. Automobiles increased by about 10,000 during the year, bringing the total in the Islands on June 30, 1941, to 81,104. This increase was almost entirely in the City and County of Honolulu where the ratio is about one car to every five residents.

With added personnel to the Army and Navy forces stationed in Hawaii, together with the presence in Hawaiian waters of the United States Fleet, the facilities of the City of Honolulu and adjacent communities have been taxed to the outmost.

PUERTO RICO

By REXFORD G. TUGWELL

GOVERNOR OF PUERTO RICO

DESCRIPTION AND AREA

Puerto Rico is a mountainous island with an area of 3,406 square miles and a total population of about 1,800,000. It is bound on the north by the Atlantic, and on the south by the Caribbean Sea. It was discovered by Christopher Columbus on his second voyage in 1493, and was settled by Don Juan Ponce de León who conquered the fierce Caribe tribes inhabiting the island. For the past 41 years—since the Spanish-American

War—the island has been a possession of the United States. San Juan, the capital city, is approximately 1,400 miles from New York City and 963 nautical miles from Key West.

The island is continually cooled by tradewinds from the northeast and possesses what the San Juan Weather Bureau calls "one of the finest winter climates on our planet." The average winter temperature is 73° F. and the summer average 76°. In the mountains of the Central Cordillera

the average temperature is 70°. Puerto Rico is considered the coolest region in the Caribbean tropics, with 90° the highest temperature ever recorded. The island is sometimes called "the tropical isle with the temperate climate."

Puerto Rico is 100 miles long and 35 miles wide, and is latticed with a network of good roads. The common language of the island is Spanish but English is taught at all schools and is widely spoken and understood.

GOVERNMENT

Puerto Rico has been held by the United States Supreme Court to be unincorporated territory of the United States, a status differing from that of those territories which have been incorporated into the Union.

Puerto Rico is governed under the Act of Congress of March 2, 1917, known as the Organic Act, and subsequent amendments. Supreme executive power is vested in the Governor, who is appointed by the President of the United States by and with the advice and consent of the Senate of the United States, and holds office at the pleasure of the President. The act provides for seven departments—Justice, Finance, Interior, Education, Agriculture and Commerce, and Labor and Health. The Attorney General, who heads the Department of Justice, and the Commissioner of Education, are similarly appointed by the President; the others are appointed by the Governor with the advice and consent of the Insular Senate. The department heads collectively form a council to the Governor known as the Executive Council. The Auditor of Puerto Rico is also appointed by the President.

The island is represented in the United States by an elected Resident Commissioner who has a seat in the United States House of Representatives, with the right to debate but not to vote.

Local Legislative powers are vested in a Senate and a House of Representatives chosen by the electorate of the island every four years.

The judiciary system consists of the

Supreme Court, the District Court of the United States for Puerto Rico, the district and municipal courts, and justices of the peace. Appeals may be made in certain cases to appropriate higher courts, including the Supreme Court of the United States. The Chief Justice and four Associate Justices of the Supreme Court, the District Judge, District Attorney, and Marshall of the District Court for Puerto Rico are appointed by the President. Statutory laws of the United States not locally inapplicable, except as otherwise provided, are in effect in Puerto Rico, except the internal revenue laws.

LEGISLATION

The first Regular Session of the Fifteenth Legislature convened Feb. 10, 1941. Among the many bills which became law, the following were outstanding: The Land Law which is intended to do away with the present land monopoly and prevent its recurrence in the future; the creation of a Minimum Wage Board in the Insular Department of Labor; to provide an eight-hour working day for the Insular Police Force; to eliminate joint salaries from government agencies in excess of \$250 per month accruing to members of one family living under the same roof; to create the Puerto Rico Water Resources Authority to take over irrigation and production of electricity; to authorize the sale of the graving Dock to the Federal Government.

On Oct. 28, 1941 the Fifteenth Legislature, in its first special session, was called by the Governor for the purpose of dealing with several immediate problems, notably inflation of prices, and the provision of new sewerage systems and water supplies. Of the bills presented at this session which were enacted and became law, the following were the most important; to authorize conveyance to the Water Resources Authority of the administration of waterworks systems constituting a menace to public health, and to empower this Authority to issue bonds up to \$5,000,000 for the improvement, extension, and con-

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struction of waterworks systems; to create the Insular Sewerage Service for extension and improvements of the Island's existing systems; to provide for the stabilization of commodity prices in local markets by establishment of a Food and General Supplies Commission; to protect lessees of residential property against unjust and oppressive rents; to prevent the establishment of slums on public lands adjacent to principal cities; to create the Institute of Tropical Agriculture within the University; to provide for continuation of certain projects begun in the Island by the Puerto Rico Reconstruction Administration.

TOURIST PROMOTION

Certain modifications were made in this program during 1941. The insular legislature passed a law abolishing the salt tax and providing for the incorporation of the Institute of Tourism into the Department of Agriculture and Commerce and assigned funds for the continuance of tourist promotion under this plan. Puerto Rico was visited in 1941 by 19,129 excursionists, as against 15,842 during the previous year.

ECONOMIC CONDITIONS

Puerto Rico is experiencing a period of great prosperity, due largely to the defense program, which is now in full swing. Construction projects connected with these activities have, for the time being, virtually done away with the Island's unemployment problem. The consequent increased circulation of money is greatly enhanced by the presence here of large numbers of the American armed forces. Tax collections on shipments of rum to the mainland were the highest recorded for any fiscal year. A decrease of \$4,560,794 was noted, however, in the total value of all products shipped to the United States, which was \$86,341,362, as compared to \$90,902,156 for the previous fiscal year. This is primarily due to the closure of many needlework factories, brought about by the enforcement on the Island of the Federal Wages and Hours Law.

AGRICULTURE AND SHIPMENTS

Sugar.—The basic sugar cane quota assigned to Puerto Rico for the year 1940-41 was 907,926 tons, as against 797,982 tons for the previous year. During the year, 7,397,363 tons of cane were ground, compared to 8,795,932 tons of cane ground the year 1939-40. A total of 891,629 tons of sugar was produced in 1940-1941, compared to 1,018,803 tons in 1939-40. A total of 141,392 tons of refined sugar was produced by the refineries in Puerto Rico, while in 1939-40, they produced 181,383 tons. During the fiscal year 1940-41 shipments of sugar to Continental United States amounted to 921,887 short tons valued at \$58,618,187, as compared with 868,568 short tons with a value of \$57,328,790 during the previous year.

Tobacco.—Approximately 48,316 acres of land were planted to tobacco. The total crop yield was 316,954 quintals, or an average of 656 pounds per acre. Shipments of leaf tobacco to continental United States amounted to 20,116,835 pounds valued at \$7,728,219. The average value per exported pound of tobacco, according to value stated in export declarations, was \$384 in 1941 and \$353 in 1939-40.

Fruit.—Puerto Rico's fruit industry has been competing in past years with producing centers such as Cuba, Florida, and other points on the Continent. Lacking the production methods and transportation facilities of these latter areas, and handicapped by the Island's geographical location in relation to mainland markets, fruit production and shipments to the mainland have steadily diminished. During the fiscal year, shipments of fresh fruits to the United States amounted to \$973,763, while shipments of canned and other prepared fruits were valued at \$477,646.

Molasses.—Shipments of molasses to the United States amounted to 17,477,686 gallons, valued at \$656,864 during the fiscal year, as against 20,562,231 gallons valued at \$575,418 for 1939-40.

Coconuts.—The exportation of shelled coconuts amounted to nearly 13,500,000 nuts, with a value of \$273,

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012. Nearly 1,200,000 pounds of shredded coconut, valued at \$88,352, were also shipped to the United States. A limited amount of green coconuts, which are valued for their milk, formed part of the exports of this year's crop.

Coffee.—Coffee exports during the fiscal year amounted to 8,172,666 pounds, according to statistics furnished by the Insular Department of Agriculture and Commerce. A combined Insular and Federal subsidy made it possible to stabilize the price of this crop by withdrawing excess stocks from the market. Benefit payments from these subsidies amounted to \$332,037.93, of which \$195,043.40 represented Insular and \$126,992.33 Federal funds. The coffee industry in Puerto Rico, however, continues in a critical situation in spite of efforts to improve it. Island coffee lacks a protected market on the mainland, and has long since lost its European markets, which seem unlikely to be restored in the near future.

Rum.—Exports of rum continue to increase year by year. During 1940-41, Puerto Rico shipped to the continent 1,809,797 gallons valued at \$6,831,487 as compared with 1,137,235 gallons with a value of \$5,567,765 in the previous year. Shipments to the United States in 1940-41 included 17,980 gallons valued at \$70,568 exported to foreign countries *via* United States.

NEW LAND LAW

A measure of tremendous importance to Puerto Rico's Agriculture is the Land Law, which was signed in the early part of the calendar year 1941. Broadly speaking this law creates an authority which is empowered to acquire and redistribute among small agriculturalists, lands in excess of 500 acres held by corporations. The Land Authority created by this law and which consists of eight members, was formed in October, 1941 under the directorship of Dr. Carlos E. Chardon.

PUBLIC FINANCE

A balance of \$6,447,843.39 remained in the Insular Treasury at the end of

the fiscal year 1939-40, representing an increase of \$3,594,511.64 over the previous year's figure. Revenue collections, which aggregated \$20,662,693.09, exceeded the Treasurer's original estimate by \$6,662,693.09. The cash balance available in trust fund amounted to \$16,030,382.67, as against \$14,801,633.06 at the close of the previous fiscal year. Outstanding bonded obligations of the People of Puerto Rico amounted to \$26,975,000, as against \$27,200,000 on July 1, 1940. During the year, bonds were issued in the sum of \$1,590,000, while total bonds redeemed amounted to \$1,815,000, thus accounting for a net decrease in the bonded indebtedness of \$225,000.

Taxes paid on Puerto Rican rum shipped to the United States amounted to \$4,550,585.26 during the year, an increase of \$1,789,683.10 over income from this source for last year. Collections from this source began in July 1, 1935, and, by virtue of the special act of Congress, this revenue reverts to the Insular Treasury. Collections for the fiscal year 1935-36 amounted to \$335,579.65. This amount was exceeded in one month's collections at the beginning of the fiscal year 1940-41, when collections for July reached \$373,427.42. The largest monthly collections ever made from this source during any year were made in the month of June, 1941, when the total reached \$645,754.62.

BANKS AND BANKING

At the end of the year, there were 12 banks with 18 branches, and one trust company doing business in Puerto Rico. Aggregate deposits with banks on June 30, 1941 amounted to \$86,654,834.21, as against \$76,373,845.68 on June 30, 1940. Bank loans and investments totaled \$46,594,667.25 at the end of the year, as compared with \$37,174,610.22 at the end of the last fiscal year. Cash on hand in banks on June 30 of 1940 and 1941, totalled \$6,367,033 and \$8,553,608.81 respectively.

HEALTH

The Island's entire territory is served by public health units under

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full-time medical officers. Six new venereal clinics were opened during the year, making a total of 35 now in operation. New activities were initiated to promote maternal and child health, while dental hygiene was provided by 11 part time dentists in the health units, and two dental trailers for rural communities. Malaria-control work is being carried out intensively in the neighborhood of several army camps to protect the health of the armed forces on the Island. There was a general death rate during 1940 of 18.8 per 1,000 population. Although this is slightly higher than the rate for the previous year, it is still the second lowest registered on the Island. This increase was primarily due to an epidemic of influenza, for which 1,079 deaths were registered. A water-borne outbreak of typhoid fever, which occurred in the city of Mayaguez, with a total of 51 cases and five deaths, was the only other major epidemic recorded during the year.

EDUCATION

The total enrollment in urban and rural elementary schools during the year was 251,231, while 16,138 students were enrolled in the high schools. The latter figure represents a decrease of 339 from the number enrolled the previous year, and is chiefly due to the fact that many students left school to work on national defense projects.

In addition to regular courses, emphasis was placed on the importance of industrial arts in both elementary and high schools. The total enrollment in industrial art classes amounted to 12,318. Fifty-four private schools were in operation during the year, with a total enrollment of 11,592. In addition, there were 13 non-accredited commercial courses and kindergarten classes.

The enrollment in the University of Rio Piedras amounted to 5,869, as against 4,987 during the preceding year. A total of 490 degrees and 296 diplomas was issued. The University's training course for reserve officers had an enrollment of 868 students, of

which 20 were graduated and received commissions in the United States army. The activities of the University were expanded by the creation in November, 1941 within the University of the college of Public Administration, and of the Institute of Tropical Agriculture, the latter of which is to be located in Mayaguez. This institute will offer specialized courses in tropical agriculture and related subjects, and will cooperate with the governments of the Americas in matters connected therewith.

LABOR

Early in the fiscal year, the Wages and Hours Administrator appointed a Special Industry Committee for Puerto Rico to investigate conditions and recommend minimum wage rates in keeping with the Island's economic condition. The Committee, which was headed by Monsignor Francis J. Haas, consisted of nine members, representing workers, employees, and the public. For the needlework industry, the most severely affected by the Wages and Hours Law, the Committee recommended wage rates fluctuating between 12½ and 22½ cents per hour, a considerable increase over those formerly prevailing. Rates of from 12½ to 25½ cents per hour were recommended for other Island industries affected by the law, and were subsequently accepted and incorporated into the wage order issued by the Wage and Hour Administrator.

Collective agreements between employers and workers were renewed in 1941 in 10 different trades and industries. In many instances improved working conditions and higher wages resulted. Wages for agricultural workers in the sugar cane industry remain at from \$1.00 to \$1.70 per day. However, the collective agreement in this industry provides for a progressive wage increase should the market price of sugar exceed \$2.99 per quintal, and as sugar prices were above this average during the year, workers received correspondingly higher wages.

The year 1941 was an excellent one for labor in general on the Island, since thousands who had formerly

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been unemployed found work on defense projects. During the fiscal year, the Mediation and Conciliation Committee of the Insular Labor Department intervened in 41 strikes affecting 11,185 workers. The most serious of these controversies was a partial dockworkers' strike which was called during the early part of the calendar year, 1941, and which lasted for about

a week, during which time many ships calling at the various ports were unable to discharge cargo. This controversy was settled satisfactorily, and it is interesting to note that the strikers made an exception of cargo destined for national defense purposes and provided in every instance for the normal discharge of such material.

THE PHILIPPINE ISLANDS

BY GUY J. SWOPE

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DEPARTMENT OF THE INTERIOR

POLITICAL AND GOVERNMENTAL STATUS

The status of the Philippine Islands is that of an unincorporated territory of the United States. Under the program provided in the Independence Act of 1934, complete independence of the Islands will be established in 1946. The act specifically sets forth the general powers and authority reserved to the United States during the transitory period of the Philippine Commonwealth Government. The public debt may not exceed limits now or hereafter fixed by the Congress of the United States; trade relations with the United States continue to be governed exclusively by Congress; Philippine legislative acts affecting currency, coinage, imports, exports, and immigration do not become effective until approved by the President of the United States; foreign affairs remain under the direct supervision and control of the United States; all acts passed by the legislative body must be reported to the Congress of the United States; decisions of the courts of the Commonwealth Government are subject to review by the Supreme Court of the United States; citizens and corporations of the United States enjoy in the Commonwealth of the Philippines all the civil rights of citizens and corporations of the Philippines. The United States reserves the right to

maintain military and other reservations in the Islands until independence, and to occupy naval reservations and fueling stations after independence. There is also reserved to the United States the right to intervene under certain conditions set forth in the act. During the period of the Commonwealth Government, a United States High Commissioner "shall be the representative of the President of the United States in the Philippine Islands."

CITIZENSHIP

Citizens of the Philippine Islands owe allegiance to and are under the protection of the United States but are not citizens thereof. Those who have had honorable service of not less than three years in the United States Army, Navy, Marine Corps, or Coast Guard may become citizens of the United States. For purposes of immigration, the Philippine Islands are considered as a separate country, and the number of immigrants that may enter the United States therefrom during each fiscal year is limited to 50.

THE EXECUTIVE GOVERNMENT

Under the constitution drafted in accordance with the provisions of the Independence Act of 1934, the executive power was vested in the President of the Philippines elected by

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the Filipino people for a six-year term and ineligible for reelection. By an amendment to the Constitution, approved by the President of the United States on Dec. 2, 1940, the term of the President and of the Vice President was changed to four years; the tenure of the President was limited to eight consecutive years. The President controls all executive branches and has general supervision over local governments. He appoints all senior officers of the government and all minor officials not otherwise provided for. The President is commander-in-chief of the armed forces of the Philippines; in emergencies he may suspend the privileges of the writ of *habeas corpus* or place the Islands under martial law. He has power to grant reprieves and pardons and remit fines and forfeitures, after conviction, for all offenses, except in cases of impeachment.

There are nine executive departments. Three of the 12 cabinet members—Vice President, Secretary to the President, and Resident Commissioner in Washington—are without portfolio. The Auditor-General is appointed by the President for a ten-year term and is not eligible for reappointment. The Philippine Resident Commissioner to the United States is appointed by the President of the Philippines.

THE LEGISLATURE

Under the Philippine constitution, the legislative power was originally vested in a unicameral body called the National Assembly to meet every year in regular session for not more than 100 days. Under the recent amendment to the constitution, the Congress is composed of a House of Representatives of 98 members and a Senate of 24 members elected at large every six years. The membership of the House of Representatives, apportioned on the basis of population, is elected by popular vote every four years. Special sessions are limited to 30 days. Close control and supervision over the natural resources of the Islands is given to the Congress. This body has power to legislate

with reference to public lands, timber, and mining. Prior to 1935, legislation on these subjects required the approval of the President of the United States before becoming effective. Heads of departments may be heard before the Congress. Veto provisions are similar to those in the United States Constitution, except that the President may veto specific items in appropriation, tariff, and revenue bills.

THE JUDICIARY

The judicial branch of the Commonwealth Government is composed of the Supreme Court, the Court of Appeals, Court of Industrial Relations, Courts of First Instance, justice of the peace courts, and municipal courts.

UNITED STATES HIGH COMMISSIONER

As the President's representative in the Islands, High Commissioner Francis B. Sayre has taken a leading part in matters having to do with the enforcement of United States laws in the Philippines. The European war and the war in the Orient have focused attention on guarding United States interests in the Far East, and the Philippines have assumed increased importance in our national defense program. Measures to strengthen this program have greatly increased the burdens of the High Commissioner's office. The President's Executive Order of April 10, 1940, bringing the funds of certain countries under control, has been administered in the Islands by his office. The United States Export Control Act was amended in May 1941 so as to include the Philippines, and it is being administered jointly by the two governments. The High Commissioner issues licenses for exportation from the Islands of the articles and materials listed in the act as necessary for national defense; the Commonwealth Government clears shipments under those licenses. The High Commissioner has cooperated with Commonwealth officials in negotiations leading to the preparation and enactment of budgets for the ex-

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penditure of the coconut oil tax funds transferred to the Commonwealth Government for use in preparing the country economically for independence in 1946, in preparation for the protection of the civilian population, and in meeting the many other needs arising out of the present emergency.*

FINANCES

On June 30, 1941, the finances of the Commonwealth Government continued in excellent condition in spite of prevailing world-wide conditions. The public debt was small. The sinking funds for all outstanding indebtedness had been regularly provided for and segregated. The currency reserves were in excess of the legal requirements for the currency in circulation. Deposits of Philippine public funds in the United States amounted to \$157,588,704.05.

During the fiscal year 1941, the total net revenues collected by the National Government amounted to \$79,333,951.61. The total expenditures amounted to \$83,883,919.05, which left a net deficit of only \$4,549,967.44 compared with that of \$12,793,201.85 in 1940. The invested surplus amounted to \$172,452,789.89.

The bonded indebtedness of the National Government on June 30, 1941, amounted to \$49,238,000. Cash and investments in the sinking funds amounted to \$13,226,931.26. Deducting this amount from the outstanding indebtedness leaves a net debt of \$36,001,068.74.

The coconut oil excise taxes collected in the United States and refunded to the Commonwealth Government, to be used in preparation for independence, average approximately \$16,750,000 a year and constitute a large part of its revenues. It is anticipated that the ordinary revenues will be drastically reduced in the next few years, so that the government is confronted with an extremely difficult adjustment of its economy to a status independent of the United States.

* For the Philippines in the war, see "The United States and Japan," p. 78.

TRADE

The total external trade of the Islands during the calendar year 1940 amounted to \$290,655,795, including gold and silver exports valued at \$38,876,748. Of this total, \$134,731,271 represents imports and \$155,924,524, exports. Compared with 1939, the import trade showed an increase, while exports decreased. Of the total trade, \$234,384,812 (or 80%) represents trade with the United States, as compared with 72% in 1939. Merchandise imported from the United States was valued at \$105,207,854, representing 78% of the total imports. Philippine shipments to the United States, inclusive of gold and silver, were valued at \$129,176,958, or 83% of the total exports. During 1941 the Export Control Act and the general war conditions had adverse effects on Philippine trade. Business with Europe has been almost completely cut off. A great number of foreign vessels have been withdrawn from the overseas trade. Free trade between the United States and the Philippines has developed in the Islands an economy very largely dependent upon the exportation of relatively few commodities to the United States. The reduced opportunities for foreign trade have increased dependence on the United States, and even this trade has been seriously hampered by the shortage of shipping bottoms and the tremendous increase in freight and insurance rates. Despite these conditions, the value of exports has held up very well. The entire 1940 quota of sugar was shipped, and that product continues to be the leading export commodity.

LEGISLATION

The third and final regular session of the unicameral National Assembly convened on Jan. 27 and adjourned on May 22, 1941. Several measures were enacted to make effective the constitutional amendments. These included one making changes in the conduct of elections and providing for the election on Nov. 11, 1941, of the President and Vice President (President Manuel L. Quezon and Vice President Sergio Osmena were

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reelected by large majorities) and members of the first Congress of the Philippines. Provision was made for a \$10,000,000 bond issue for public works and several provincial bond issues were authorized. Among the national defense measures were an espionage act modeled after the American measure and a compulsory alien registration act. The legislation passed in 1940 granting to the President of the Philippines extraordinary emergency powers due to the international situation was extended until the closing of the first session of the Congress of the Philippines in 1942. On the last day of the session the Assembly reaffirmed its adherence to the program for independence in 1946 by passing a resolution stating that "it is the sense and conviction of the Filipino people and the National Assembly that the question of the political relations between the United States and the Philippines is definitely settled and that the only thing that remains to be done in order to bring our national aspirations to complete realization is to remove all the obstacles that may stand in its way so that independence shall be effective in the year 1946."

EDUCATION

The educational activities of the government have continued to increase. In the school year 1940 there was an enrollment of 1,940,729 in 12,057 public schools under a staff of 43,763 teachers, principals, supervisors, and superintendents. Enrollment in private educational institutions numbered 149,491. In addition, there were 136 recognized schools offering special vocational courses to 9,188 students. Continuing its campaign of teaching the illiterate masses the fundamentals of reading and writing, citizenship, vocational guidance, and cultural information, the government had in operation 5,053 adult education schools with an enrollment of 289,499 illiterates. For the support of the expanded public school system, the central government alone made appropriations amounting to \$11,711,910. On April 1, 1940, the President

ordered the national language, based on the Tagalog dialect, to be taught in the public and private schools beginning June 19, 1940. Until the end of the Commonwealth period, however, instruction in the public schools will be conducted primarily in English.

GENERAL CONDITIONS

The effects of the present wars continue to be the source of an increasing number of problems. Philippine economic conditions have been so disturbed as to affect seriously the economic readjustment program essential to preparation for independence in 1946. To avoid further injury to industries and a drastic reduction in government revenues, the National Assembly petitioned, in May 1941, for an amendment of the Independence Act that would suspend both the export taxes and the progressive reduction of quotas. Measures to comply with this petition are under consideration in Congress.

Business conditions have been generally satisfactory. Order has been maintained. The most serious internal disturbance was a mass attack by a Moro outlaw band on a constabulary post in Jolo, resulting in the death of more than 20 Moros. Communistic agitation has continued in the province of Pampanga. Commonwealth officials have loyally cooperated with the United States in its efforts to cope with the present emergency. The President of the Philippines offered to the United States the man power and resources of the country, and, pursuant to authority granted him by the Independence Act, the President of the United States, on July 26, 1941, called the organized military forces of the Philippines into the service of the United States for the duration of the emergency.

General Douglas MacArthur, field marshal of the Philippine army, was recalled to active duty and designated as Commanding General of the United States armed forces in the Far East. Civilian defense has been assumed by the Commonwealth Gov-

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ernment and preparations therefor progressed rapidly. Volunteer Guards and air-raid wardens throughout the Islands were trained, air-raid rehearsals and evacuation drills were held in certain urban centers, and measures were taken to curb profiteering, to prohibit the exportation of food prod-

ucts, to purchase and store supplies, to erect air-raid shelters, and to provide otherwise for the safety of the civilian population. The state of public health has been quite satisfactory. During the past year the Philippines remained free from any case of quarantinable disease.

VIRGIN ISLANDS OF THE UNITED STATES

BY ROBERT MORSS LOVETT

GOVERNMENT SECRETARY, VIRGIN ISLANDS OF THE UNITED STATES

DEFENSE ROLE OF THE ISLANDS

Because of both their strategic location geographically and their recent links to Europe economically and historically, the Virgin Islands of the United States are a key in America's outer ring of defenses. And in few places under the American flag has the basic economic, social, and political structure of community life been so radically affected by America's gigantic defense activities. To understand this key defense role, some knowledge of certain of the basic geographic and historical facts are necessary.

GEOGRAPHICAL DESCRIPTION

The Virgin Islands are a part of the so-called Leeward Islands, and lie at their northernmost curve. The farthest East of all of America's possessions, they are the nearest-Europe land under the American flag. Fifty-odd separate islands comprise the group, but only three, St. Thomas, St. Croix and St. John are inhabited, and are of importance in a military or economic sense.

St. Thomas is the seat of the government and the center of commercial activity. Situated some 1,400 miles from New York and 1,000 miles from the Panama Canal, it is a spearhead or apex of a triangle for protection of both the East and Gulf Coasts of the mainland, and for the vital Panama Canal link in the defense chain. It has one of the finest natural harbors in all of the West Indies, and dock facilities to accommodate the

largest ocean-going freighters and liners. The population is slightly in excess of 11,000. Virtually all have the rights and privileges of American citizens. St. Thomas' 32 square miles of terrain is almost wholly mountainous, bisected by excellent hard-surfaced roads constructed with an eye to potential military needs.

St. John lies northeast of St. Thomas and is separated from it at the extremities by only three miles of open water. Population is approximately 700, and there are no towns nor industries whatever. Agriculture is restricted to local subsistence gardening. The Island's 19 square miles are almost wholly mountainous, and there are no harbors or bays of sufficient depth to permit the entry of ships of any size. Because of these facts, the Island of St. John has little significance from a military point of view.

St. Croix, largest and most populous of the Virgin Islands group and the group's potential economic center, lies 40 miles southward in the Caribbean. Its 82 square miles of area consist for the most part of broad, fertile plains, broken on the north and east with rolling hills, many of whose slopes teem with deer and other wild life. The 12,000 plus population is supported by agriculture, primarily sugar cane production, rum distillation, and some local fishing. In addition to sugar cane, the soil has produced excellent cotton and tobacco, and highly successful growing of subsistence crops such as beans, corn, sweet potatoes,

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and tomatoes is being encouraged. Both of its towns, Christiansted on the northeastern coast and Fredriksted on the western, are without adequate harbor facilities, although the erection of a breakwater and the dredging of a channel at Christiansted is being planned.

To forestall a potential German threat to the Panama Canal from a Germany possibly based, by right of conquest, only a scant thousand miles away, the United States purchased the Virgin Islands from the Royal Crown of Denmark for \$25,000,000 in a treaty ratified by both nations and proclaimed Jan. 25, 1917. For 15 years the Islands were administered by a United States Naval Government. In 1931, they were transferred to the Department of the Interior, and have been administered as a United States possession since that date.

MILITARY ESTABLISHMENTS

St. Thomas, with its magnificent harbor, commercial activity, and prior history of German penetration, is the logical place for defense activity to be centered. The only United States submarine base between the American mainland and the Canal Zone is in the process of being completed. Bourne Field, a huge air base of the Marines, has been established and is constantly being enlarged.

On the South side of St. Croix, the Army is building Benedict Field, an air base, with bomber and fighter squadrons currently assigned there.

Thus, both by air and by sea, the Virgin Islands are a spear-head for the protection of the American continent and Panama Canal, with the Army, Navy, and Marines in force, far out in the Atlantic toward Europe.

ECONOMIC SITUATION

The tremendous amount of construction involved in the building of these bases, with accompanying roads and necessary housing developments, has profoundly affected the economic and social structure, particularly at the capital, St. Thomas. Hundreds of workers have abandoned their subsistence truck gardening, small scale

fishing, charcoal burning, or jobs as domestics or clerks, and the like, to accept cash employment as laborers on one or the other of the huge projects. To many, the actual surplus cash is a hitherto almost unknown excitement. Increasingly large numbers of sailors and marines have had paydays to spend. Likewise, many skilled workers have had to be imported from neighboring Puerto Rico and from the mainland. Workers for ordinary civilian tasks, such as building and repairing houses, gardening, or small scale farming, are difficult to obtain even at much higher rates of pay than in recent years.

At the same time, the Navy has requisitioned the boat which made regularly scheduled trips between Puerto Rico, St. Thomas, and St. Croix, and formed a link with the mainland. Freight service has become irregular and scant, at a time when priorities are making for shortages in some lines of consumer goods on the mainland.

The result in St. Thomas has been something approximating the typical boom town. Prices on all commodities have arisen sharply. It is impossible at times to obtain many commodities at all, even such things as the larger sizes of men's clothing and household utensils. Almost all types of food are substantially higher than anywhere on the mainland, including New York.

On St. Croix, virtually all of the land is given over to either cattle raising or sugar production. Until the construction by the government of a new abattoir and cold-storage plant on the outskirts of Christiansted, there have been no facilities for the slaughtering and dressing of meat anywhere in the Virgin Islands, and cattle have been sold on the hoof and transported to Puerto Rico. Market facilities have been of the most primitive sort. Hence, the greater part of the food consumed on the Islands has to be imported.

With irregular shipping schedules and abnormal demand, normal methods of distribution have been strained and in many cases have broken down. It must be understood that the

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foregoing applies primarily to St. Thomas, the seat of government and center of defense activities. St. Croix has had a serious unemployment problem for the past several years, and the job-opportunities at the Army's Benedict Field have done little more than absorb the slack, in part. St. Croix has, however, suffered from the lack of regular transportation facilities, and prices have risen and distribution been dislocated as a consequence.

NON-DEFENSE ACTIVITIES

As has been pointed out, the normal economic structure of St. Croix rests upon agriculture, primarily sugar production, and that of St. Thomas upon shipping, primarily the transshipment of bauxite, the raw material from which aluminum is made.

Exports of raw sugar during 1941 fell to less than 2,000 tons, from a high of approximately 21,000 tons in the early 1920's. This was due primarily to a three-year drought, resulting in an abnormally low sucrose content in the cane. The prospects for the 1942 crop are considerably brighter and funds for the completion and operation by the Virgin Islands Co. of the historic Bethlehem Sugar Mill, with a capacity of 1,000 tons of cane a day, give promise of adequate grinding facilities, which were taxed to the limit and beyond even by 1940's poor crop.

The cattle industry likewise shrunk during 1941 to the lowest point in several decades, with something less than 6,000 head as compared with 10,000 in 1932. Utilizing about two-thirds of the land, it provided less than 5 per cent of the employment. But here again, prospects for 1942 are considerably brighter with the construction of the modern abattoir complete with slaughter pens, dressing rooms and freezing and cold storage facilities.

THE VIRGIN ISLANDS COMPANY

Unquestionably, the most significant and important non-defense activity in the Virgin Islands during 1941 was that of the Virgin Islands

Co., under its new president, Frederick H. Walton. The company is government owned with a total stock issue of three shares; one share each is held by the Secretary of the Interior, the First Assistant Secretary, and the Governor of the Virgin Islands. The shares pass with the office. The company is forbidden to make a profit for surplus or distribution to stockholders, and does not compete with established private industry.

Originally created in 1934, for the primary purpose of alleviating distress among the sugar growers of St. Croix, who, for a time, had been on Red Cross relief, the Virgin Islands Co. has become by far the largest and most important industrial concern on St. Croix, and is spreading its economic rehabilitation activities to St. Thomas and St. John. It operates the only sugar mill on the Islands, grows and buys sugar cane on its own account, exports raw sugar, and distills and bottles the nationally-distributed Government House rum.

One of the company's most important efforts, however, is its concerted attempt to broaden the economic base of the Islands by providing relief from dependence upon sugar cane. Partially as a defense measure to make the Islands independent of the mainland for basic foodstuffs in the event developments in the war cut off even the present irregular transportation facilities, the Company is sponsoring a vast, island-wide food production program. Upwards to 5,000 acres, it is expected, will be given over to the cultivation of beans, corn, potatoes, tomatoes and other subsistence crops. In this connection, a canning factory is being constructed.

The abattoir likewise is of great potential importance in the economic future of the Islands, in that it is designed to make cattle raising a profitable source of revenue. However, the cattle on the Islands must be greatly increased in number and improved in breed in order to obtain the maximum benefits from the operation of the abattoir.

The Rural Electrification Administration in cooperation with the Virgin

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Islands Co. erected a modern 1,000 horse-power alternating current power and light plant to serve all of the company's needs, those of the Army Air Base, and a large number of rural and industrial users. This plant was energized on Nov. 24, and is being operated by VICO.

At the same time, funds have been allotted for the erection and operation during 1942 by the Virgin Islands Company of an even larger A.C. plant on St. Thomas, which will serve as a stand-by station for the Air and Submarine Bases, as well as make greater industrial development possible.

Of great potential benefit to the community, particularly in view of the sharply increased demand for foodstuffs caused by defense activities, is the modern market under construction in St. Thomas which it is expected will be in operation early in 1942. In addition to sorely needed market and cold storage plants, this market will include facilities for cleansing, dressing, and quick-freezing of fish, giving rise to the hope that a substantial fishing industry may be established in the Islands, the Caribbean and Atlantic waters adjacent to which teem with fish. The operation of the market will be co-ordinated with the operation of the new abattoir within the framework of the Virgin Islands Company.

GOVERNMENT

The Virgin Islands are a United States possession, administered by the

Department of the Interior under an Organic Act passed by Congress in 1936. This Organic Act is by way of being the Constitution, or Magna Carta, of the people, giving them a far greater degree of self-government than they have ever enjoyed before.

The Governor is appointed by the President, as is the Government Secretary, a post combining the several functions of Lieutenant-Governor, Secretary of State, and several other offices.

A number of public officers who, on the mainland, are usually employees of the local community are paid by the Federal Government out of central budget funds. Included in this category of local officers federally paid are the Commissioner of Health, the Superintendent of Education, and Superintendent of Public Works.

Local legislative powers are vested in two municipal councils, that of St. Thomas and St. John, consisting of seven members, and that of St. Croix, consisting of nine members. Joint sessions of the municipal councils constitute the Legislative Assembly of the Virgin Islands, with power to enact legislation applicable to the Islands as a whole.

During the year Lawrence W. Cramer resigned as Governor, and was succeeded by Judge Charles Harwood of New York, who took the oath of office Feb. 3, 1941. Dr. Robert Morss Lovett continued as Government Secretary.

GUAM AND AMERICAN SAMOA

By G. L. WOODRUFF

LIEUTENANT COMMANDER U. S. N.; OFFICE OF ISLAND GOVERNMENTS,
NAVY DEPARTMENT

GUAM

Historical.—Guam, the largest and most populous of the Marianas Islands, lies at the southern end of the group in approximate latitude 13° N. and longitude 145° E. It was discovered by Magellan in 1521, and he gave

to the group of islands the name Ladrones. Later, in honor of Marie Ana of Austria, Queen of Spain, the name was changed to Marianas. In 1668 the first Spanish missionaries landed in Guam to begin the work of christianizing the natives. Under

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Spanish rule a period of colonial development was inaugurated, and the island remained in Spanish possession until its capture June 21, 1898 by the U.S.S. *Charleston* under the command of Capt. Henry Glass, U. S. Navy. The Treaty of Paris, which ended the Spanish-American War, ceded Guam to the United States.

Government.—By Executive Order dated Dec. 23, 1898, President McKinley placed Guam under the control and jurisdiction of the Navy Department. The chief executive of the island is a naval officer commissioned by the President as governor, and ordered to duty by the Secretary of the Navy as commandant of the Naval Station, Guam, which includes the entire island. Each of the various departments in the administrative organization of the Government of Guam is headed by a naval officer, and each of the 15 municipalities into which the Island is divided is in charge of a commissioner appointed by the governor. A Congress composed of representatives elected by the natives meets periodically to discuss with the governor matters concerning the Island. It is an advisory body only, having no legislative authority. Taxes paid by the citizens of Guam provide the chief source of revenue from which Naval Government activities are financed. Agana, the only city of Guam, is the seat of government. Capt. G. J. McMillin, U. S. Navy, is the present Governor of Guam.

Population.—In July, 1941, the population of Guam was 23,394, an increase of 327 over the previous year, divided as follows: native born, 21,994; foreign born, 812; naval establishment and families, 588. Guam natives are called Chamorros, but few if any pure-blooded Chamorros are still there. The inhabitants are a mixed race of Malay origin with strains of Spanish, Mexican, Filipino, Chinese, and American blood, the Malay strain predominating. English is the official language, but the Chamorro tongue, corrupted by various dialects, is generally spoken. The natives of Guam are not citizens of the United States.

They are, however, United States nationals and are considered as wards of the United States Government. Under the present paternal form of government they are protected from exploitation and are little affected by the industrial, political, and economic problems of the outside world. Only citizens of Guam or of the United States may own land in Guam, and all sales of land must be approved by the Island Government.

Agriculture.—Guam is essentially an agricultural community, and nearly every native family provides at least part of its own food through the cultivation of small plots of ground. The soil is fertile though in some parts shallow, and the rapidity of jungle growth over most of the island makes constant clearing necessary. Cooperating with the U. S. Department of Agriculture, the Guam Department of Agriculture is working toward development of new food crops and the training of natives in better farming methods; increased production of livestock is encouraged; and through the work of its extension agents the Department tries to impress upon the natives the importance of making the island as nearly as possible self-supporting. The cultivation of newly cleared lands and the resultant increase in the production of foodstuffs have helped to relieve the threatened shortage of food caused by the typhoon of Nov. 3, 1940, which destroyed the natural food crops on which the natives have always depended. Copra is the chief crop and principal article of export.

Trade and Commerce.—During the fiscal year, 1941 Guam exports totaled \$84,278; of this amount \$10,515 was obtained from the export of articles of the agbag weaving industry and the remainder chiefly from the sale of copra. Imports totaling \$994,010 brought the balance of trade against Guam for the fiscal year, 1941 to \$909,732. Vessels to the number of 171, most of which were government vessels and aircraft clipper ships of the transpacific service, entered and cleared at Port Apra during the fiscal year. Air transportation from the

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United States and the Orient to Guam continues to be an important medium establishing the island's connection with the outside world.

Banking.—The Bank of Guam, established by Executive General Order on Dec. 20, 1915, is the only bank on the island. Its capital stock of \$25,000 is owned by the Naval Government of Guam, and the bank is authorized to engage in commercial banking as a division of the Naval Government treasury. While its main purpose is the operation of a commercial banking business in accord with approved standards, the bank strives to aid in the general advancement of Guam as a whole. During the year the bank financed purchase of imports by local merchants to the value of \$602,050. Gross earnings for the fiscal year, 1941 were \$36,348 and net earnings were \$30,203.

Health and Sanitation.—Guam has but one civilian physician and no civilian hospitals. One civilian contract dentist works on part time contract to the Federal Government. Medical care is provided free of charge to the natives of Guam by Naval medical officers, and, yearly, the Federal Government appropriates funds for hospitalization of certain indigent native cases. The Naval Hospital, also supported by Federal appropriation, is maintained chiefly for the treatment of the native population and the furnishing of medical supplies to health activities caring for natives. Guam hospitals are operated by Naval medical officers and native nurses trained by the Medical Department.

Education.—Academic instruction includes the usual grade school subjects, and, in addition, special training in industry and agriculture is provided. School attendance is compulsory for children between the ages six and twelve. Guam has 32 public schools and one private school; included are 23 academic day schools; one junior-senior high day school; one evening High School; six industrial units; and one school including grades one to twelve for use of children of service personnel. The aver-

age enrollment for the 1940-1941 school year was 5,084. All instruction is given in the English language. Native teachers are employed in the regular native schools; teachers in the American school are usually properly qualified persons who are members of families of the Naval establishment.

AMERICAN SAMOA

Historical.—American Samoa includes the islands of Tutuila, Aunu'u, Ofu, Olosega, Tau, Rose, and Swain's. The group is believed to have been discovered by Jacob Roggeveen in 1722 while in command of a Dutch expedition *en route* to Cape Horn via Java. They were known as the Bauermann Islands until 1768 when the French circumnavigator, Bougainville, renamed them Navigator's Islands. In 1839, Capt. Charles Wilkes, U. S. Navy, visited the group while in command of an exploring expedition and gave them the name Samoan Islands. Throughout the latter part of the 19th century tribal warfare and the conflicting interests of United States, Germany, and Great Britain disturbed the peace of the islands. In 1899 a treaty agreed to by these three nations gave Germany the islands west of 171° W., and those east of that line were assigned to the United States. On April 17, 1900 the High Chiefs of Tutuila voluntarily ceded Tutuila and Aunu'u to the United States, and the islands of the Manua Group were ceded by their chiefs on July 16, 1904.

Government.—An Executive Order signed by President McKinley Feb. 9, 1900 placed American Samoa under the control and jurisdiction of the Navy Department, and since that time the dependency has been governed by various naval officers receiving their commissions as governor from the President. The same officer is ordered by the Secretary of the Navy to duty as Commandant of the Naval Station, Tutuila. The governor is aided by heads of the various departments making up the organization of the Island Government as well as by native district governors and native county chiefs who take

THE DISTRICT OF COLUMBIA

an active part in local government. The Constitution of the United States does not extend to American Samoa, and the Federal laws of the United States apply only in a few specified instances. The "Codification of the Regulations and Orders for the Government of American Samoa" embodies the written laws, which, as necessary, are amended from time to time by the Governor. The present Governor is Capt. Lawrence Wild, U. S. Navy.

Population.—On June 30, 1941, the population of American Samoa was 14,458. Since acquisition of the islands by the United States, the population of American Samoa has increased more than 100 per cent, the increase being due largely to the cessation of warfare among the natives and to the work of the medical officers of the United States Navy in connection with health and sanitation.

Agriculture.—The development of agriculture in American Samoa has not progressed rapidly although the government makes every effort to encourage the natives to develop their lands for agricultural purposes. In addition to the numerous tropical fruits and vegetables native to Samoa, many others have been introduced through the agency of the Experimental Farm in an attempt to add new food plants suited to the soil and climate. Copra is the chief product of the soil and the chief article of export.

Trade and Commerce.—Steamers of the Oceanic Steamship Co., making 13 trips per year in each direction, and vessels of the Matson Navigation Company, operating on a four-weeks'

schedule, provide the only means of trade with the outside world. Imports for the fiscal year, 1941 amounted to \$263,703, half of which came from Australia and New Zealand. Exports amounted to \$93,839, of which \$23,557 was received from the sale of 862 tons of copra.

Banking.—American Samoa has only one bank, the Bank of American Samoa, founded in 1914 by executive order of the governor. The capital stock of \$25,000 is owned by the Island Government, and its principal officers and directors are naval officers. The bank, which conducts a commercial and savings business, made steady growth during the year.

Health and Sanitation.—General health conditions in American Samoa were very good during the year, due to the efficient work of the Naval Medical Corps personnel. There are no civilian physicians in the islands, and the medical officers of the Island Government treat the entire native population free of charge. Modern hospitalization is provided, and native nurses are trained by the naval personnel.

Education. — Forty-one public schools, six private schools, and the Feleti School (endowed by the Barstow Foundation) were in operation during the year, employing 16 white and 93 native teachers. The average student enrollment for the year was 3,000. English is the official language, and the subjects taught include agriculture, native arts, hygiene and sanitation, and religion. Children of pre-school age were given instruction by native pastors in the Samoan language.

THE DISTRICT OF COLUMBIA

By W. REED WEST

PROFESSOR, THE GEORGE WASHINGTON UNIVERSITY

WARTIME WASHINGTON

For months in 1941 the population of Washington increased rapidly through the expansion of government services to meet the needs of the mil-

itary program and to provide aid to the anti-Axis powers. The declarations of war in December accelerated this growth in population. The housing situation became acute, and the

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traffic problem presented many difficulties. Some relief was afforded by the erection of government office buildings in nearby Virginia. Proposals for the further staggering of hours for government bureaus were considered to relieve the traffic situation. A few government bureaus were moved to other cities, and the year 1941 closed with proposals to remove others, at least for the duration of the emergency.

There was considerable fear that the enemy might attempt at least a "token" air raid on Washington, and precautions against this were taken. The unfamiliar picture was presented of guns mounted on the roofs of some of the government buildings. Congress enacted a "blackout law" (Public No. 373) authorizing the Commissioners in time of war to order blackouts, subject to approval of the Secretary of War, and to take other measures to make the blackouts effective and to protect life and property during such times. Negotiations with authorities in Maryland and Virginia to synchronize blackouts were authorized; the municipality was relieved of liability for damages to person or property during blackouts; the penalties (except life imprisonment and death) for crimes committed during blackouts were doubled; special unpaid police were authorized; acceptance of volunteer service was authorized; evacuation of residents was provided for, subject to approval of the Secretary of War, and negotiation with state authorities to care for evacuees authorized, and provision made for the necessary funds; and a loan of \$1,000,000 for defense, from the Treasury, was authorized. Another Act (Public No. 362) authorized a loan of \$2,500,000 through the Federal Works Administration for defense purposes.

Wartime influence on the public schools was evidenced in an act (Public No. 348) setting up an optional course in aeronautics in the senior high schools, with authorization for additional courses.

Another act, intended to relieve congestion on the streets by provid-

ing for highway improvements, increases the tax on gasoline by one cent a gallon. The District gasoline tax before this increase was reported to be lower than that of 47 of the states.

"CEILING" FOR RENTS

Incidental to the emergency created by war, Congress enacted legislation fixing a "ceiling" for rents in the District. In general, the rates and services prevailing on Jan. 1, 1941 is taken as the standard; for houses not rented on that date, but rented during the preceding year, the rents and services last prevailing are accepted; and for other houses the prevailing rents and services for comparable housing are accepted. Adjustments are authorized to meet special circumstances, to take special improvements into consideration, and to meet increased costs. Actions are authorized to recover property for personal use by the owner. An Administrator of Rent Control is provided to administer the act and he is authorized to raise or lower the general ceiling to meet changes in the costs for any particular class of housing. Petitions for adjustments may be made to the Administrator and appeals may be made to the municipal court on the ground that a ruling is not in accordance with law or supported by substantial evidence. The act is to terminate on Dec. 31, 1945.

SOCIAL LEGISLATION

While the District is not a heavily industrialized area, a not inconsiderable amount of industry is carried on. There has been a great increase in the number of industrial accidents in recent years. In 1939 there were 26,647 non-fatal and 50 fatal industrial accidents. In 1940 there were 31,265 non-fatal and 76 fatal accidents. Most of these accidents were in construction work, and it was thought that most were due to the lack of minimum safety requirements and proper supervision. As a result, a new title has been added to the Minimum Wage Act of 1918, requiring employers in industry to maintain reasonably safe conditions and practices, and the

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Minimum Wage Board has been renamed the Minimum Wage and Industrial Safety Board, with powers of rule-making and supervision. The Board is authorized to employ a Director of Industrial Safety to administer the law and regulations thereunder (Public No. 271).

The original act setting up the Board of Public Welfare (See *THE AMERICAN YEAR BOOK*, 1926) did not provide for the appointment of employees under a merit system. Since Federal law now requires that grants from the Federal Government in aid of social work may be made only when the funds are administered by appointees chosen under a merit system, the District has been faced with the loss of the Federal grants. As a result, the District law has been amended to bring future employees of the Board, except the director, under the jurisdiction of the Federal Civil Service Commission, present employees, if citizens of the United States, to acquire a competitive civil service status if appointed from the highest available eligibles of the Civil Service Commission or, otherwise, upon passing a non-competitive examination. In addition, the Board must prescribe for employees engaged in work in which the Federal Government shares the expense, such requirements for eligibility for non-competitive examinations as are laid down under the Federal laws in respect to such grants. The Commissioners are authorized to give preference in future appointments to residents of the District (Public No. 363).

The District Unemployment Compensation Act of 1935 provided for the future classification of employers in groups according to unemployment experience, their unemployment taxes to be graduated between $1\frac{1}{2}$ and 4 per cent (see *THE AMERICAN YEAR BOOK*, 1935 and 1940) but up to now all have been paying the same rate, at present 2.7 per cent. A fund of \$23,000,000 has been built up, although the District Unemployment Compensation Board considers \$10,000,000 sufficient. Under the circumstances, the time for classifying the

employers has been extended to July, 1943 (Public No. 321).

Other social legislation brought the District within the provisions of section 303 (a), (9) of the Social Security Act in respect to the method of paying administrative expenses (Public No. 149); and authorized (Public No. 237) the payment of burial expenses of needy blind persons receiving aid under the act of 1935. (See *THE AMERICAN YEAR BOOK*, 1935.)

PURE FOOD ADMINISTRATION

Prior to the Act of June 23, 1939, effective one year thereafter, the Health Officer of the District had had authority to condemn food found unfit for human consumption. That act, referring to food, drugs, devices, and cosmetics, had removed this authority by including commerce within the District of Columbia in its definition of interstate commerce, and the law permitted condemnation only by the lengthy procedure of an action in a United States District Court. In order to improve the procedure, an act (Public No. 350) returned to the Health Officer his former powers in respect to foods. The act did not repeal any of the restrictions of the Act of 1939.

CONVICT-MADE GOODS

A clarification of Federal laws appears in Public No. 160. The Federal law prohibiting the interstate transportation of prison-made goods had granted certain exemptions from the operation of the act, and among these were articles made in District penal and correctional institutions for use by the Federal Government. This left open the question whether goods made in the District penal institutions in Virginia for the use of the District Government were included in the exemptions. Public No. 160 clarifies the law by exempting goods made for the District Government from the provisions of the act of 1940.

MISCELLANEOUS LEGISLATION

Minor legislation deserving mention includes Public No. 60, bringing

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reckless driving, from which personal injury results, within the provisions of the law requiring the suspension of drivers' permits and registration certificates of persons convicted of certain offenses, until proof of financial responsibility is established (see *THE AMERICAN YEAR BOOK*, 1935); Public No. 380, authorizing minors to appear in theatrical productions (see *THE AMERICAN YEAR BOOK*, 1928); Public No. 61, permitting the property clerk of the Police Department to return the proceeds of crime to their rightful owners without liability for error if he acts in good faith; Public No. 339, applying substantially the same provisions to District as are now applied to Federal penal institutions in respect to the introduction of narcotics, weapons, and other contraband articles or messages, with a penalty of not more than ten years; Public No. 341, for technical reasons substituting "deputy" clerks in place of "assistant" clerks in the District Court of the United States for the District of Columbia, with authority to sign the clerk's name to documents; Public No. 64, authorizing the Federal Works

Administrator to furnish steam from the Central Heating Plant to the Municipal Building, the office of the Recorder of Deeds, and certain other buildings, the steam to be supplied at not less than cost in connections with the Federal mains furnished by the District; Public No. 264, increasing to \$500,000 the amount authorized by a building for the Recorder of Deeds (see *THE AMERICAN YEAR BOOK*, 1940); Public No. 284, authorizing admission to Saint Elizabeths Hospital of insane persons belonging to the Foreign Service of the United States; Public No. 111, relieving the United States district attorney and certain court officers from the requirement that they live in their district and permitting them to live within 20 miles of the District of Columbia; Public No. 269, to the effect that Federal employees appearing in court as witnesses for the District and District employees appearing in court as witnesses for the District or for the United States, shall not be paid witness fees but shall not suffer loss of salary or loss of leave of absence as a result of such appearance.

PART THREE

GOVERNMENTAL FUNCTIONS

DIVISION VII

PUBLIC FINANCE AND TAXATION

NATIONAL FINANCE AND THE PUBLIC DEBT

BY WILLIAM J. CARSON
PROFESSOR, UNIVERSITY OF PENNSYLVANIA

GENERAL

As the economy of the United States shifted late in 1941 from its increasingly expanding national defense effort, on which it had been focused since June 1940, to a program concerned with the demands of a nation actually engaged in war, Federal fiscal policy was directed toward the major task of financing war. In his message to the Congress early in January 1942, President Roosevelt said that the budget of the United States Government which he was then transmitting was the budget of a nation at war in a world at war. It reflected the needs of the country to provide the funds to man and equip its fighting forces, for the organization of its resources, and for continuance of its role as the arsenal of democracy. Total expenditures for the fiscal year ending June 1942 are estimated to be \$30,576,000,000, and in the fiscal year ending June 1943 they are expected to increase to \$58,928,000,000. Of the amounts for the fiscal year ending June 1943, outlays for national defense are expected to reach \$52,786,000,000 and non-defense expenditures will total \$6,142,000,000. Of the defense expenditures in fiscal 1942, \$3,500,000 is to aid the Allies through the Lend-Lease program and in fiscal 1943 the amount is expected to increase to \$7,500,000,000.

To meet these larger expenditures greater revenues will be essential but increased borrowing also will be necessary. The President said in his message that net receipts in fiscal 1941 were \$7,607,000,000 and estimated receipts in fiscal 1942 and 1943 are \$11,944,000,000 and \$16,487,000,000, respectively. On the basis of these figures the gross deficit, including debt retirement, to be financed by borrowing will be \$5,168,000,000 in fiscal 1941, \$18,732,000,000 in fiscal 1942, and \$35,541,000,000 in fiscal 1943. At the end of fiscal 1941 the Federal debt totaled \$48,961,000,000; in fiscal 1942 and fiscal 1943 it will total \$70,612,000,000 and \$110,421,000,000, respectively.

Table I summarizes the receipts, expenditures and deficit in fiscal 1941, and the estimated receipts, expenditures, and deficit in fiscal 1942 and 1943.

FEDERAL EXPENDITURES

Federal expenditures in fiscal 1941, and estimated expenditures in fiscal 1942 and 1943 are shown in detail in Table II.

Examination of Table II shows that expenditures in fiscal 1941, the first year of the defense program, totaled \$12,775,000,000. In 1942 total expenditures are estimated at \$30,676,000,000 and in 1943 they are ex-

VII. PUBLIC FINANCE AND TAXATION

pected to reach \$59,000,000,000. As compared with 1941 the increase in expenditures in 1942 and 1943 is due almost entirely to greater outlays for national defense. From a total of \$6,301,000,000 in 1941, expenditures for national defense are estimated to reach \$23,997,000,000 in 1942 and \$52,786,000,000 in 1943. Of the increases in expenditures for national defense

TABLE I

ACTUAL AND ESTIMATED BUDGET OF THE UNITED STATES GOVERNMENT FOR EACH FISCAL YEAR, 1941, 1942 AND 1943

General and Special Accounts

Classification	Estimated, Fiscal Year 1943	Estimated, Fiscal Year 1942	Actual, Fiscal Year 1941
I. Receipts:			
1. Internal revenue.....	\$17,261,367,000	\$12,198,665,000	\$7,361,674,982.23
2. Railroad Unemployment Insurance Act.....	9,500,000	8,500,000	6,814,717.52
3. Customs.....	297,000,000	368,000,000	391,870,013.27
4. Returns of surplus funds from government corporations...	.....	.....	319,207,200.00
5. Other.....	284,223,000	240,915,000	188,945,672.48
Gross receipts.....	\$17,852,090,000	\$12,816,080,000	\$8,268,512,585.50
Deduct net appropriation for Federal old-age and survivors insurance trust fund...	1,364,890,000	872,087,000	661,300,733.42
Net receipts.....	\$16,487,200,000	\$11,943,993,000	\$7,607,211,852.08
II. Expenditures:			
1. Legislative, judicial and executive.....	\$43,487,800	\$41,329,300	\$38,497,649.05
2. Civil department and agencies: Post Office Department, deficiency.....	797,445,700	844,470,700	782,456,994.30
3. General Public Works Program.....	578,231,000	713,523,500	573,056,675.43
4. National defense.....	52,786,186,000	23,996,525,400	6,301,043,165.91
5. Veterans' pensions and benefits.....	590,087,000	578,116,000	559,255,646.57
6. Aids to agriculture: Gross expenditures.....	854,050,000	1,117,082,000	1,094,203,136.72
Return of surplus funds from government corporations.....	.....	.....	*315,000,000.00
7. Aids to youth.....	100,000,000	235,095,000	347,204,168.83
8. Social security.....	537,825,000	462,045,000	444,446,546.79
9. Work relief: Gross expenditures.....	480,075,000	942,430,000	1,451,910,183.92
Return of surplus funds from government corporations.....	.....	.....	*14,000,000.00
10. Refunds.....	87,005,000	89,002,000	89,667,290.92
11. Interest on the public debt...	1,750,000,000	1,250,000,000	1,110,692,811.91
12. Retirement funds.....	298,599,800	267,177,262	217,065,000.00
13. Supplemental items—regular..	25,000,000	25,000,000	.....
Total expenditures, excluding debt retirement.....	\$58,927,992,300	\$30,575,796,162	\$12,710,629,823.97
III. Budget deficit under present tax legislation.....	\$42,440,792,300	\$18,631,803,162	\$5,103,417,971.89
IV. Receipts from proposed tax legislation.....	\$7,000,000,000	.....	.....
V. Budget deficit under proposed tax legislation.....	\$35,440,792,300	\$18,631,803,162	\$5,103,417,971.89
VI. Debt retirement.....	\$100,000,000	\$100,000,000	\$64,260,500.00
VII. Gross deficit.....	\$35,540,792,300	\$18,731,803,162	\$5,167,678,471.89

NATIONAL FINANCE AND THE PUBLIC DEBT

TABLE I—Continued

Effect of Operations on the Public Debt

Classification	Estimated, Fiscal Year 1943	Estimated, Fiscal Year 1942	Actual, Fiscal Year 1941
Public debt at beginning of year.....	\$70,612,246,697	\$48,961,443,535	\$42,967,531,037.68
Increase in public debt during year:			
To meet budget deficit above.....	\$35,440,792,300	\$18,631,803,162	\$5,103,417,971.89
To purchase obligations of govern- mental corporations.....	4,368,000,000	3,019,000,000	.....
Increase in working balance, general and special accounts.....	.....	.....	890,494,526.14
Net increase in public debt dur- ing year.....	\$39,808,792,300	\$21,650,803,162	\$5,993,912,498.03
Public debt at end of year.....	\$110,421,038,997	\$70,612,246,697	\$48,961,443,535.71

* Credits, deduct.

¹ From new taxes only. The net excess in social security trust funds is estimated to be \$2,000,000,000 in 1943 under proposed new legislation.

in the current year, fiscal 1942, as compared with 1941, increases for the Navy Department total \$3,524,000,000 and those for the War Department amount to \$7,995,000,000. In 1943 expenditures for the Navy Department will reach \$6,849,000,000 while those for the War Department will approximate \$18,619,000,000—increases of approximately \$1,000,000,000 and \$7,000,000,000 respectively, over those in 1942.

As defense expenditures increase, those for non-defense purposes are estimated to be smaller. Between fiscal 1941 and fiscal 1942, only limited contractions are noted in non-defense outlays, but between fiscal 1942 and 1943 substantial reductions are expected in several areas, notably in outlays for public works, in aids to agriculture, and for work relief. Reductions in non-defense expenditures are considered essential as a step in preventing inflation, and still greater reductions than now contemplated are urged by many students of public finances.

REVENUE AND TAXATION

Total receipts by the Treasury during the fiscal year 1941 were \$8,269,000,000, approximately \$2,345,000,000 more than in 1940. Larger receipts reflected higher tax rates, and addi-

tional taxes as well as increased business activity resulting from the large expenditures for defense. In 1942 and 1943 receipts are estimated to be \$12,816,000,000 and \$17,852,000,000 respectively.

In commenting upon receipts in his 1942 budget message President Roosevelt said: "Total receipts from existing tax legislation will triple under the defense and war programs. They are expected to increase from 6 billion dollars in the fiscal year 1940 to 18 billion dollars in the fiscal year 1943. This increase is due partly to the expansion of economic activities and partly to tax legislation enacted during the last two years. As we approach full use of our resources, further increases in revenue next year must come predominantly from new tax measures rather than from a greater tempo of economic activity."

Commenting further, the President pointed out that "taxes on incomes, estates and corporate profits are showing the greatest increase. Yields from employment taxes are increasing half as fast; and the yields from excise taxes are increasing more slowly; customs are falling off. On the whole our tax system has become more progressive since the defense effort started."

Table III shows in detail the actual

VII. PUBLIC FINANCE AND TAXATION

TABLE II

ACTUAL AND ESTIMATED EXPENDITURES OF THE UNITED STATES GOVERNMENT FOR EACH FISCAL YEAR, 1941, 1942 AND 1943

General and Special Accounts

Classification	Estimated, Fiscal Year 1943	Estimated, Fiscal Year 1942	Actual, Fiscal Year 1941
I. Legislative, Judicial and Executive:			
1. Legislative establishment.....	\$26,622,800	\$25,494,800	\$24,172,235.98
2. Judicial establishment.....	12,681,000	12,311,000	11,425,848.47
3. Executive office of the President.....	4,184,000	3,523,500	2,899,564.60
Total, legislative, judicial and executive.....	\$43,487,800	\$41,329,300	\$38,497,649.05
II. Civil departments and agencies:			
1. Department of Agriculture.....	\$119,161,000	\$128,050,000	\$129,117,728.10
Rural Electrification Administration.....	5,500,000	9,600,000	24,187,152.25
2. Department of Commerce.....	30,230,000	37,245,600	45,271,633.22
Civil Aeronautics.....	38,584,000	35,940,000	26,037,086.54
3. Department of the Interior.....	67,961,800	76,601,300	78,685,940.85
4. Department of Justice.....	62,086,000	58,716,000	56,702,470.08
5. Department of Labor.....	11,677,000	12,345,000	12,225,818.56
6. Department of State.....	24,540,000	21,852,600	20,433,140.26
7. Treasury Department (excluding Coast Guard).....	155,169,500	149,663,600	125,090,651.80
8. War Department (nonmilitary).....	40,596,000	46,049,000	49,514,984.37
Panama Canal.....	22,804,000	27,956,000	29,106,073.99
9. District of Columbia, United States share.....	6,000,000	6,000,000	6,000,000.00
10. Federal Loan Agency.....	5,700,000	9,450,000	11,493,193.19
11. War Department (nonmilitary).....	162,800,000	185,500,000	172,680,114.52
12. Federal Works Agency.....	42,700,000	44,818,000	31,654,175.71
13. Other independent offices and establishments.....	84,768,400	74,460,600	65,769,698.27
14. Refugee relief.....	17,000,000	46,500,000	16,460,809.53
Unclassified items.....			*180,648.94
Adjustment for disbursing officers' checks outstanding.....			*596,771.60
Subtotal.....	\$797,445,700	\$844,470,700	\$782,456,994.30
15. Postoffice Department, deficiency.....		14,000,000	30,130,553.62
Total, civil departments and agencies.....	\$797,445,700	\$858,470,700	\$812,587,547.92
III. General public works program:			
1. Federal Security Agency.....	\$300,000	\$800,000	\$287,440.18
2. Federal Works Agency.....	108,468,000	206,737,000	217,428,155.80
3. National Advisory Committee for Aeronautics.....	12,000,000	5,810,000	5,542,268.15
4. Tennessee Valley Authority.....	145,000,000	145,000,000	51,175,171.37
5. Veterans' Administration.....	4,500,000	6,000,000	3,425,155.51
6. Department of Agriculture.....	7,500,000	9,000,000	7,447,484.73
7. Department of Commerce.....		2,611,000	825,513.50
8. Department of the Interior.....	135,469,000	148,583,500	111,020,544.63
9. Department of Justice.....	370,000	340,000	797,618.88
10. Department of State.....	1,824,000	3,142,000	2,427,208.16
11. War Department (nonmilitary).....	162,800,000	185,500,000	573,056,675.52
Total, general public works program.....	\$578,231,000	\$713,523,500	\$573,056,675.43

NATIONAL FINANCE AND THE PUBLIC DEBT

TABLE II—Continued

Classification	Estimated, Fiscal Year 1943	Estimated, Fiscal Year 1942	Actual, Fiscal Year 1941
IV. National Defense:			
1. Navy Department.....	\$6,849,359,000	\$5,833,112,400	\$2,308,658,623.44
2. War Department.....	18,618,615,000	11,668,710,000	3,672,312,769.19
3. Defense aid (lend-lease).....	7,500,000,000	3,500,000,000	21,394,691.36
4. Other.....	2,818,212,000	1,996,703,000	298,677,081.92
5. Supplemental items.....	17,000,000,000	1,000,000,000	.....
Total, national defense...	\$52,786,186,000	\$23,996,525,400	\$6,301,043,165.91
V. Veterans' pensions and benefits..	\$590,087,000	\$578,116,000	\$559,255,646.57
VI. Aids to agriculture:			
1. Agricultural Adjustment Program.....	790,220,000	938,902,000	967,762,918.98
2. Commodity Credit Corporation.....	.....	1,637,000	.....
3. Farm Tenant Act.....	4,192,000	7,643,000	27,287,958.63
4. Federal Farm Mortgage Corporation.....	.....	9,600,000	9,340,201.41
5. Federal land banks.....	.....	26,800,000	28,874,662.23
6. Farm Security Administration.....	50,700,000	58,000,000	62,165,326.97
7. Farm Credit Administration.....	8,938,000	74,500,000	*1,227,931.50
Subtotal.....	\$854,050,000	\$1,117,082,000	\$1,094,203,136.72
Return of surplus funds from government corporations...	.....	.....	*315,000,000.00
Total, aids to agriculture.	\$854,050,000	\$1,117,082,000	\$779,203,136.72
VII. Aids to youth:			
1. Civilian Conservation Corps..	.....	\$155,000,000	\$257,396,531.12
2. National Youth Administration.....	.....	80,095,000	89,807,637.71
3. Emergency youth program—supplemental items.....	\$100,000,000	.....	.....
Total, aids to youth.....	\$100,000,000	\$235,095,000	\$347,204,168.83
VIII. Social security:			
1. Administrative expenses.....	\$ 27,125,000	\$ 23,945,000	\$ 26,698,957.43
2. Grants to States.....	510,700,000	438,100,000	417,747,589.36
Total, social security.....	\$537,825,000	\$462,045,000	\$444,446,546.79
IX. Work relief:			
1. Work Projects Administration.....	.....	\$875,000,000	\$1,284,593,920.85
2. Public Works Administration..	\$ 11,075,000	49,600,000	140,264,355.08
3. Other.....	4,000,000	17,830,000	27,051,907.99
4. Supplemental items.....	465,000,000	.....	.....
Subtotal.....	\$480,075,000	\$942,430,000	\$1,451,910,183.92
Return of surplus funds from government corporations...	.....	.....	14,000,000.00
Total, work relief.....	\$480,075,000	\$942,430,000	\$1,437,910,183.92
X. Refunds:			
1. Customs.....	\$19,000,000	\$19,000,000	\$27,331,472.73
2. Internal revenue.....	60,005,000	62,002,000	54,220,101.51
3. Processing tax on farm products	8,000,000	8,000,000	8,115,716.68
Total, refunds.....	\$87,005,000	\$89,002,000	\$89,667,290.92
XI. Interest on the public debt.....	\$1,675,000,000	\$1,250,000,000	\$1,110,692,811.91
Supplemental items.....	75,000,000	.....	.....
Total, interest on the public debt.....	\$1,750,000,000	\$1,250,000,000	\$1,110,692,811.91

VII. PUBLIC FINANCE AND TAXATION

TABLE II—Continued

Classification	Estimated, Fiscal Year 1943	Estimated, Fiscal Year 1942	Actual, Fiscal Year 1941
XII. Retirement funds:			
1. Railroad retirement account..	\$191,359,000	\$164,292,000	\$124,350,000.00
2. Government employes' retirement funds (United States share).....	107,240,800	102,885,262	92,715,000.00
Total, retirement funds..	\$298,599,800	\$267,177,262	\$217,065,000.00
XIII. Supplemental items—regular....	\$25,000,000	\$25,000,000	.....
Total, expenditures (excluding debt retirement)	\$58,927,992,300	\$30,575,796,162	\$12,710,629,823.97
XIV. Debt retirement.....	\$100,000,000	\$100,000,000	\$64,260,500.00
Total, expenditures.....	\$59,027,992,300	\$30,675,796,162	\$12,774,890,323.97

* Excess of credits, deduct.

receipts in the fiscal year 1941 and estimated receipts in the fiscal years 1942 and 1943.

GROWTH AND DISTRIBUTION OF THE PUBLIC DEBT

At the close of the fiscal year ended June 30, 1941 the Federal gross direct debt was \$48,961,000,000. In the remaining months of calendar 1941 it increased month by month and at the end of November 1941 it amounted to \$55,040,000,000. By June 30, 1942, the end of the fiscal year 1942, it is estimated to total \$70,612,000,000. A year later, June 1943, it is expected to reach \$110,421,000,000. Table I, summarizing the effect of financing operations on the Federal debt in fiscal 1940, 1941, and 1942, shows the amount of the direct debt at the end of each year. Table IV below shows in detail the growth of the direct public debt month by month from January 1938 to November 1941.

In addition to the direct debt as thus described the guaranteed debt of the several Federal agencies totaled \$6,370,000,000 at the end of fiscal 1941, an increase of \$841,000,000 over the amount outstanding June 1940. The agencies for which obligations have been guaranteed are the Federal Farm Mortgage Corporation, Home Owners Loan Corporation, Recon-

struction Finance Corporation, United States Housing Authority, Commodity Credit Corporation, and Federal Housing Administration.

Distribution of the Federal debt, direct and guaranteed among different investors, is shown in Table V. Examination of the table shows that the largest holders are member banks of the Federal Reserve System, insurance companies, general investors and Federal agencies including the Federal trust funds. Between 1940 and 1941 a larger proportion of the increase in the Federal debt was purchased by member banks than by any other investors as a group.

BOND PRICES AND YIELDS

Rates at which the Federal debt was financed continued low in 1941 but a definite change in the trend of yields appeared to have developed. While yields on long term bonds declined still further, and those on 3-5 year notes averaged about the same as in 1940, yields on new issues of Treasury bills increased during the year and were higher in November and December than in several years. Whether this forecasts higher yields on median and long term obligations can not of course be determined at this time. It suggests, however, that the low point in the downward trend

NATIONAL FINANCE AND THE PUBLIC DEBT

TABLE III

ACTUAL AND ESTIMATED RECEIPTS OF THE UNITED STATES GOVERNMENT FOR EACH FISCAL YEAR, 1941, 1942 AND 1943

General and Special Accounts Excluding Postal Revenues

Source	Estimated, Fiscal Year 1943	Estimated, Fiscal Year 1942	Actual, Fiscal Year 1941
1. Internal Revenue:			
(1) Income tax (including tax on unjust enrichment).....	\$11,316,000,000	\$7,147,000,000	\$3,469,637,848.48
(2) Miscellaneous internal revenue taxes:			
Capital stock tax.....	239,500,000	232,000,000	166,652,639.88
Estate tax.....	500,000,000	360,000,000	355,194,033.49
Gift tax.....	30,700,000	150,000,000	51,863,714.03
Liquor taxes.....	1,195,800,000	1,095,000,000	818,472,565.15
Tobacco taxes.....	841,442,000	772,140,000	693,177,937.69
Stamp taxes.....	45,025,000	42,925,000	39,056,858.70
Manufacturers' excise taxes....	637,000,000	720,800,000	610,606,481.17
Retailers' excise taxes.....	135,100,000	73,200,000	.....
Sugar tax.....	66,200,000	72,200,000	74,834,721.90
Sundry taxes.....	515,700,000	344,700,000	144,694,830.11
Total (unadjusted).....	4,206,467,000	3,862,965,000	2,954,553,332.12
Adjustment to daily Treasury statement.....	.....	.....	+12,310,466.71
Total, miscellaneous internal revenue taxes.....	\$4,206,467,000	\$3,862,965,000	\$2,966,863,798.83
(3) Employment taxes:			
Taxes on employment by other than carriers:			
Federal Insurance Contributions Act.....	\$1,394,100,000	\$900,400,000	\$690,554,674.33
Federal Unemployment Tax Act.....	150,400,000	117,600,000	97,676,584.19
Total.....	\$1,544,500,000	\$1,018,000,000	\$788,231,258.52
Taxes on carriers and their employes.....	194,400,000	170,700,000	136,942,076.40
Total, employment taxes..	\$1,738,900,000	\$1,188,700,000	\$925,173,334.92
Total, Internal revenue....	\$17,261,367,000	\$12,198,665,000	\$7,361,674,982.23
2. Railroad Unemployment Insurance Act.....	\$ 9,500,000	\$ 8,500,000	\$ 6,814,717.52
3. Customs.....	297,000,000	368,000,000	391,870,013.27
4. Miscellaneous receipts:			
(1) Miscellaneous taxes.....	\$ 2,591,300	\$ 2,584,300	\$ 2,453,568.57
(2) Rents and royalties.....	26,266,287	17,548,873	8,546,664.38
(3) Permits, privileges and licenses...	3,974,330	3,743,780	3,320,132.24
(4) Mint receipts.....	81,315,000	81,719,000	72,232,244.42
(5) Interest, exchange and dividends	42,948,393	20,290,749	13,481,161.81
(6) Fines and penalties.....	4,675,360	5,097,160	3,087,216.43
(7) Fees.....	15,037,800	14,682,150	14,262,903.14
(8) Forfeitures.....	954,091	1,010,341	1,060,337.32
(9) Assessments.....	8,719,500	7,984,500	8,261,232.53
(10) Reimbursements.....	13,426,894	12,464,549	10,301,684.41
(11) Gifts and contributions.....	48,022	54,221	89,173.75
(12) Sales of products.....	23,776,169	16,201,789	7,517,416.30
(13) Sales of services.....	34,933,987	32,114,737	28,009,973.22
(14) Sundry receipts.....	9,482,595	8,437,971	7,581,571.12
(15) Return of surplus funds from government Corporation ¹.....	.....	.....	319,207,200.00

¹ Represents return of capital funds pursuant to the President's letter of July 18, 1940. Other return of surplus funds of government corporations reflected as credits against expenditures.

VII. PUBLIC FINANCE AND TAXATION

TABLE III—Continued

Source	Estimated, Fiscal Year 1943	Estimated, Fiscal Year 1942	Actual, Fiscal Year 1941
(16) Repayments of investments.....	12,894,533	13,768,333	5,047,764.01
(17) Sales of public lands.....	115,000	115,000	182,970.37
(18) Sales of government property....	3,063,739	3,097,547	4,228,093.79
Total.....	\$284,223,000	\$240,915,000	\$508,871,307.81
Adjustment to daily Treasury statement.....	.....	.....	-718,435.33
Total, miscellaneous receipts, general and special accounts	\$284,223,000	\$240,915,000	\$508,152,872.48
Gross receipts, general and special accounts.....	\$17,852,090,000	\$12,816,080,000	\$8,268,512,585.50
Deduct net appropriation for Federal old-age and survivors insurance trust fund.....	1,364,890,000	872,087,000	661,300,733.42
Net receipts, general and special accounts	\$16,487,200,000	\$11,943,993,000	\$7,607,211,852.08

of interest rates may have been reached.

Tables VI, VII, and VIII show the course of yields and prices by months of the three years 1939, 1940 and 1941.

TABLE VII

AVERAGE YIELD ON LONG-TERM OBLIGATIONS OF U. S. GOVERNMENT

U. S. Bonds

	1939	1940	1941
January.....	2.47	2.30	1.99
February.....	2.44	2.32	2.10
March.....	2.34	2.25	2.01
April.....	2.30	2.25	1.96
May.....	2.17	2.38	1.92
June.....	2.13	2.39	1.91
July.....	2.16	2.28	1.90
August.....	2.21	2.25	1.94
September.....	2.65	2.18	1.94
October.....	2.60	2.10	1.88
November.....	2.46	1.97	1.85
December.....	2.35	1.89	....

Although the low yields to date have been to the definite advantage of the Treasury in that they have enabled the increase in the public debt to be financed at a low cost, yields at slightly higher levels now would be to the advantage of the institutional and the general investor, if not to the Treasury as well. It is not un-

TABLE VIII

UNITED STATES GOVERNMENT BOND PRICES

(Monthly Averages of Daily Figures)

Month	1939	1940	1941
January.....	103.7	106.0	110.4
February.....	104.1	105.7	108.8
March.....	105.4	106.7	110.1
April.....	106.0	106.7	110.8
May.....	107.8	104.9	111.4
June.....	108.4	104.8	111.5
July.....	107.9	106.3	111.7
August.....	107.2	106.7	111.1
September.....	101.3	107.7	111.1
October.....	102.0	108.8	112.0
November.....	103.8	110.7	112.4
December.....	105.3	111.8	....

likely that they would readily attract funds to finance the emergency that have been slow thus far to flow into government obligations because of the very low yields.

PROBLEMS OF FISCAL POLICY IN 1942 AND AFTERWARDS

In the closing paragraphs of this section of THE AMERICAN YEAR BOOK for 1940 the growing importance of fiscal policy in economic organization was noted. To the problems therein outlined a year ago subsequent events have added others that emphasize

NATIONAL FINANCE AND THE PUBLIC DEBT

TABLE IV GROWTH OF THE DIRECT PUBLIC DEBT

(in millions of dollars at end of each month)

	Total Receipts	Total Expendi- tures	Surplus (+) or Deficit (-)	Trust Account Receipts (+) or Ex- penditures (-)	General Fund Balance	Gross Debt
1938						
January.....	335	533	-198	.....	2,950	37,453
February.....	349	515	-166	+11	2,975	37,633
March.....	959	748	+211	+31	3,140	37,557
April.....	273	642	-369	-36	2,689	37,511
May.....	375	568	-193	+158	2,567	37,423
June.....	774	930	-156	+63	2,216	37,165
July.....	311	763	-451	+325	2,116	37,192
August.....	487	683	-195	-63	2,260	37,594
September.....	711	751	-40	-41	2,978	38,394
October.....	332	769	-437	-3	2,569	38,424
November.....	382	678	-296	-6	2,447	38,604
December.....	704	862	-157	-31	3,083	39,428
1939						
January.....	308	693	-385	+30	2,932	39,632
February.....	417	662	-245	+428	3,342	39,859
March.....	737	870	-132	+52	3,388	39,986
April.....	268	785	-517	+93	3,042	40,064
May.....	397	744	-348	+89	2,923	40,283
June.....	613	951	-339	+95	2,837	40,441
July.....	308	807	-499	-113	2,446	40,663
August.....	420	822	-402	-44	2,230	40,893
September.....	719	784	-65	+46	2,177	40,859
October.....	322	764	-442	-1	1,913	41,037
November.....	407	691	-284	+267	2,166	41,305
December.....	569	889	-320	+15	2,476	41,943
1940						
January.....	315 ¹	712	-398	+37	2,282	42,110
February.....	444	668	-224	+36	2,350	42,365
March.....	799	822	-22	+11	2,514	42,540
April.....	304	783	-479	+58	2,210	42,658
May.....	400	647	-247	-83	2,030	42,808
June.....	649	887	-238	-62	1,891	42,968
July.....	331	818	-487	+51	2,258	43,771
August.....	447	706	-259	+320	2,454	43,905
September.....	711	759	-48	-158	2,415	44,073
October.....	333	869	-536	-24	1,920	44,137
November.....	362	817	-455	+216	1,817	44,273
December.....	740	1,172	-432	-209	2,319	45,025
1941						
January.....	340	1,111	-771	+15	2,025	45,877
February.....	541	1,075	-534	-3	1,701	46,090
March.....	1,566	1,399	+167	-236	2,715	47,173
April.....	565	1,315	-750	+403	2,425	47,231
May.....	394	1,141	-747	-264	1,904	47,721
June.....	1,276	1,528	-252	-259	2,633	48,961
July.....	413	1,598	-1,185	+599	2,599	49,513
August.....	397	1,529	-1,133	-2	2,873	50,921
September.....	1,135	1,874	-739	-293	2,266	51,346
October.....	445	2,083	-1,637	-225	2,641	53,584
November.....	564	1,858	-1,294	-484	2,317	55,040
December.....	.....	.....	.....	.....	.....	.....

¹ Net receipts.

and make still more crucial the tasks of the fiscal authorities, legislators, and students of fiscal affairs generally. Many of these problems become apparent immediately when it is realized that the program to which the

VII. PUBLIC FINANCE AND TAXATION

TABLE V

DISTRIBUTION OF UNITED STATES GOVERNMENT SECURITIES, DIRECT AND FULLY GUARANTEED

June 30, 1940 and 1941

(in millions of dollars)

	June 30 1940	June 30 1941	Change
Total.....	\$47,874	\$54,747	+\$6,873
Held by Federal agencies and trust funds:			
Special issues.....	\$4,775	\$6,120	+\$1,345
Public issues.....	2,292	2,360	+78
Held by Federal Reserve Banks.....	2,466	2,184	-282
Privately held:			
Total.....	38,341	44,083	+5,742
Member banks.....	14,722	18,078	+3,356
Other commercial banks.....	1,830	2,020	+190
Mutual savings banks.....	3,110	3,430	+320
Insurance companies.....	6,100	6,600	+500
Other investors:			
Marketable issues.....	9,700	9,700	0
U. S. Savings and adjusted service bonds..	2,900	4,300	+400

nation has dedicated itself calls for diverting half of its economic effort or national income to defense and war. To formulate and execute programs of expenditures, taxation, and debt necessary to finance the production of the goods and services needed for defense and war and at the same time provide for essential civilian needs, without destructive inflation, is a task of the first magnitude. It is

one that demands the increasing attention of students, legislators, public administrators, and managers of enterprise, and can only be handled effectively by the continuing efforts of all.

With reference to taxation President Roosevelt said in his budget message in January 1942: "I stated last year in the budget message that extraordinary tax measures may be

TABLE VI

AVERAGE YIELD ON SHORT-TERM OBLIGATIONS OF THE UNITED STATES GOVERNMENT

	1939		1940		1941	
	New Issues of Treasury Bills	3-5 Year Treasury Notes	New Issues of Treasury Bills	3-5 Year Treasury Notes	New Issues of Treasury Bills	3-5 Year Treasury Notes
January.....	.002	.65	.001	.47	(1)	.43
February.....	.004	.63	.004	.46	.034	.55
March.....	.005	.51	(1)	.42	.089	.50
April.....	.019	.50	.003	.45	.092	.52
May.....	.006	.42	.042	.65	.082	.44
June.....	.006	.39	.071	.76	.089	.38
July.....	.017	.45	.009	.57	.097	.37
August.....	.046	.48	.019	.58	.108	.33
September.....	.102	1.07	.021	.48	.055	.34
October.....	.028	.77	(1)	.43	.049	.41
November.....	.018	.64	.003	.34	.242	.57
December.....	.015	.55	(1)	.35	.298	.64

¹ Rate negative.

STATE FINANCES

needed to 'aid in avoiding inflationary price rises which may occur when full capacity is approached.' The time for such measures has come. A well-balanced tax program must include measures which combat inflation. Such measures should absorb some of the additional purchasing power of consumers and some of the additional funds which accrue to busi-

ness from increased consumer spending. . . . A number of tax measures have been suggested for that purpose, such as income taxes collected at the source, payroll taxes, and excise taxes. I urge the Congress to give all the proposals careful consideration. Any tax is better than an uncontrolled price rise."

STATE FINANCES

BY CATHERINE G. RUGGLES

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EXPENDITURES

State expenditures for 1939, the last year for which data are available, were almost 12 per cent greater than those for 1938. The increase was greatest in expenditures for maintenance and operation. Interest payments declined in actual amount, and although capital outlays increased they did not increase in the same proportion as expenditures for maintenance and operation. A glance at the adjoining table indicates that all expenditures for maintenance and operation increased except those for highways and schools. The greatest increase took place in payments for unemployment compensation. A large part of the rise in these expenditures is to be accounted for by the fact that such payments were made for the first time by 21 states, bringing the total number of states paying unemployment benefits in 1939 to 46. Expenditures for charities, hospitals, and corrections, which exceeded expenditures for schools for the first time in 1938, were again the largest single item. The growth in this item in recent years is due in large part to state participation in the Federal social security program.

REVENUE

The increase of approximately 12 per cent in expenditures was accompanied by very little change in revenue. Sales taxes were the most important source of state revenue, con-

stituting almost one third of the total. Of the various sales taxes levied by states, the gasoline tax was most productive. If gasoline taxes are combined with motor vehicle licenses, it will be seen that the two together produced over one fifth of all revenue. Florida received over 45 per cent of its revenue from these two sources. Income and property taxes yielded about the same proportion of total revenue, approximately 6 and 7 per cent respectively. The decrease in income taxes as compared with 1938 was due to the recession of 1937 and 1938. Income taxes were most productive in New York, where they yielded about one fifth of total revenue. A tax on general property was levied by 36 states, and was most productive in Maine, Nebraska, and Nevada, where it yielded over 15 per cent of total revenue. Taxes for unemployment compensation were second to sales tax in size, but since they are earmarked for a special purpose and can not be used for the support of general government, they belong in a different category from other taxes. Unemployment compensation taxes are much more important in some states than others, depending upon the economic character of the state. In Rhode Island and New Jersey, where there are many industries, these taxes produced over 28 per cent of total revenue, while in Mississippi and the Dakotas, where there is little industry, they

VII. PUBLIC FINANCE AND TAXATION

TOTAL EXPENDITURES OF STATE GOVERNMENTS

	1939		1938		1939 Comparison with 1938 1938 = 100
	(In Thousands)	% of Total	(In Thousands)	% of Total	
Total.....	\$4,455,304	100.0	\$3,992,598	100.0	111.6
Expenditures for maintenance and operation of general de- partments.....	3,578,669	80.3	3,173,894	79.5	112.8
Interest.....	117,423	2.6	123,510	3.1	95.1
Capital Outlays.....	759,212	17.1	695,194	17.4	109.2

EXPENDITURES FOR MAINTENANCE AND OPERATION

	1939		1938		1939 Comparison with 1938 1938 = 100
	(Amount in Thousands)	% of Total	(Amount in Thousands)	% of Total	
Total.....	\$3,578,669	100.0	\$3,173,894	100.0	112.8
General departments.....	169,475	4.7	154,008	4.8	110.0
Protection to persons and property	126,841	3.5	123,412	3.9	102.8
Highways.....	464,291	13.0	472,555	14.9	98.3
Health and sanitation.....	48,756	1.4	45,001	1.4	108.3
Charities, hospitals, and correc- tions.....	1,158,628	32.4	1,059,800	33.3	109.3
Schools.....	873,246	24.4	874,770	27.6	99.8
Libraries.....	2,823	.1	2,492	.1	113.3
Recreation.....	9,152	.3	8,279	.3	110.5
Development and conservation of natural resources.....	100,191	2.8	89,098	2.8	112.5
Pensions.....	50,348	1.4	46,124	1.5	109.2
Unemployment compensation....	517,950	14.5	249,413	7.9	207.7
Miscellaneous.....	57,068	1.6	48,844	1.5	116.8

produced less than 5 per cent of total revenue.

Grants from the Federal Government constitute an important part of state revenue. Before 1939 most of the Federal grants were for highways, but in 1939, for the first time, Federal grants for public assistance exceeded those for highways. Grants for public assistance and for highways constituted almost three-fourths of all Federal grants. Other grants were made for education, public health, unemployment compensation administration, employment services, and agriculture.

Estimates of state tax collections for 1941, which are available at this time, indicate an increase in total taxes of about 7 per cent between 1940 and 1941. The increase in income taxes and sales taxes appears to be especially notable, reflecting greater business activity as a result of the defense program.

CHANGES IN TAX LAWS

Changes in state tax laws in 1941 were numerous. The Federal Government passed a law known as the Buck Act, permitting states to extend their sales, use, and income taxes to private persons in Federal areas. Alabama, Arkansas, Illinois, Iowa, Michigan, Missouri, Oklahoma, South Dakota, Utah, and West Virginia tax contractors operated under cost-plus-fixed fee contracts with the Federal Government. The law does not sanction any tax on a government instrumentality that would be a burden on the government itself. It is not at all clear, however, whether or not post exchanges and government contracts on a cost-plus-a-fixed-fee-basis are government instrumentalities. In Florida and Kansas such contracts have been held by the Supreme Court to be subject to taxation. Oregon and Washington have provided for taxing sales on military reservations and other

STATE FINANCES

Federal areas. New York, Pennsylvania, and Texas have exempted all sales of cigarettes, and New York, New Jersey, Vermont, Florida, and Pennsylvania have exempted certain sales of liquor on Federal reservations. Oregon, Kansas, California, and Missouri have exempted gasoline used by the Federal Government, or for certain national defense contracts. Georgia and South Carolina have exempted gasoline used in United States planes for training cadets.

Numerous other changes were made to lessen the severity of the national emergency. Michigan and Minnesota exempted homesteads while men are in service. Soldiers and sailors need not pay the income tax due in New York until six months after they are discharged from the service. New York will also refund motor vehicle registration fees and renew chauffeur's and operator's licenses without an examination even if the three-month period of grace has elapsed.

Minnesota, New Hampshire, and Wisconsin will also make refunds on plates surrendered by persons in the military service. Soldiers are to be exempt from motor vehicle operators' fees in Connecticut and Oklahoma. Maine will furnish free plates for Federal vehicles. The motor vehicles of non-residents in the military force stationed in the state have been exempted from taxation in Arkansas, Maryland, North Dakota, and Wyoming. North Carolina requires no license for vehicles working on national defense projects or doing certain hauling for T.V.A. and A.A.A. Accountants in the military service are to be exempt from the annual fee for renewing licenses in California. In Maine, New Hampshire, and Vermont soldiers are to be exempt from the poll tax.

SALES TAXES

Many changes were made in sales tax laws in 1941. Louisiana repealed

REVENUE

	1939		1938		1939 Comparison with 1938 1938 = 100
	Amount (In Thousands)	% of Total	Amount (In Thousands)	% of Total	
Total	\$4,741,285	100.0	\$4,669,529	100.0	101.5
Taxes	3,615,513	76.3	3,586,516	76.8	100.8
Property.....	318,501	6.7	331,342	7.1	96.1
Income.....	285,205	6.0	329,081	7.1	86.7
Corporation.....	120,194	2.5	149,436	3.2	80.4
Individual.....	165,011	3.5	179,645	3.9	91.9
Inheritance.....	130,564	2.8	141,559	3.0	92.2
Poll.....	4,967	.1	5,158	.1	96.3
Severance.....	43,225	.9	53,313	1.2	81.1
Sales	1,393,861	29.4	1,377,240	29.5	101.2
Motor fuel.....	731,842	15.4	723,718	15.5	101.1
General sales and use.....	445,722	9.4	440,503	9.4	101.2
All others.....	216,297	4.6	213,019	4.6	101.5
Business licenses.....	275,983	5.8	282,294	6.0	97.8
Non business licenses and permits.....	323,462	6.8	322,628	6.9	100.3
Motor vehicle.....	302,400	6.4	303,389	6.5	99.7
All others.....	21,062	.4	19,239	.4	109.5
Unemployment compensation.....	801,113	16.9	701,585	15.0	114.2
All others.....	38,632	.8	42,316	.9	91.3
Non Taxes	1,125,772	23.7	1,083,014	23.2	103.9
Special Assessments.....	877	*	1,849	*	47.4
Grants.....	682,559	14.4	653,896	14.0	104.4
Pension Assessments.....	53,190	1.1	48,867	1.1	108.8
Interest.....	104,368	2.2	94,485	2.0	110.5
Charges for current services.....	189,928	4.0	186,382	4.0	101.9
Contributions from public service enterprises.....	51,688	1.1	52,704	1.1	98.1
All others.....	43,162	.9	44,831	1.0	96.3

*Less than 1/20 of 1%.

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its tax of 1 per cent. Sales taxes which | The tax rate was increased from 2 to had been scheduled to expire in | 3 per cent in Washington; it is to be Colorado, Missouri, North Dakota, | reduced to 2 per cent again when a and North Carolina were continued. | graduated personal income tax is

SALES TAXES AND GROSS INCOME TAXES

STATE	TAX
Alabama.....	.2% of gross receipts of retail sales; 5% on sale of automobiles; extends to amusements.
Arizona.....	.2% of gross receipts of retail sales of tangible personal property; extends to other kinds of business at rate of .25%-2%.
Arkansas.....	.2% of gross receipts of retail sales of tangible personal property; extends to amusements, public utilities, transmission services, and printing.
California.....	.3% of gross receipts of retail sales of tangible personal property.
Colorado.....	.2% of gross receipts of retail sales of tangible personal property; extends to public utilities and to meals.
Connecticut.....	\$.1 on each \$1,000 of gross income of unincorporated retailers; 25¢ on each \$1,000 of gross income of unincorporated wholesalers; extends to unincorporated motor transportation, amusement, and manufacturing business at \$1 per \$1,000 of gross income.
Delaware.....	.1% of aggregate cost value of merchandise purchased by merchants in excess of \$5,000; .025% of gross receipts of manufacturers; .1% of gross receipts of contractors not over \$100,000 and .05% of excess over \$100,000; .2% of aggregate cost value of commodities purchased by wholesalers of grain, fruits, and vegetables.
District of Columbia.....	1-4% of gross receipts in excess of \$2,000, depending upon difference between cost of goods sold and sale price.
Illinois.....	.2% of gross receipts from retail sales of tangible personal property; 3% on gross receipts of public utilities.
Indiana.....	.25% of gross income from wholesale sales; .5% of gross income from retail sales; .25% of income from manufacture or production of oil, gas, stone, coal, sand, gravel, minerals, timber, and agricultural products; .25% of gross income of other business.
Iowa.....	.2% of gross receipts from retail sales of tangible personal property; extends to amusements and public utilities.
Kansas.....	.2% of gross receipts from retail sales of tangible personal property; extends to public utilities, amusements, meals and drinks.
Michigan.....	.3% of gross receipts of retailers; extends to public utilities.
Mississippi.....	.2% of gross receipts of retailers; .125% of gross receipts of wholesalers; extends to other kinds of business at rate of .25%-2.5%.
Missouri.....	.2% of gross receipts of retail sales of tangible personal property; extends to amusements, public utilities, charges for rooms, meals, and drinks.
New Mexico.....	.2% of gross receipts of retailers; .125% of gross receipts of wholesalers; extends to other kinds of business at .25%-1%.
North Carolina.....	.3% of gross receipts of retailers; .05% of gross receipts of wholesalers.
North Dakota.....	.2% of gross receipts of retail sales of tangible personal property; extends to public utilities and amusements.
Ohio.....	.3% of gross receipts of retail sales of tangible personal property.
Oklahoma.....	.2% of gross receipts of retail sales of tangible personal property; extends to public utilities; amusements and other kinds of business.
Pennsylvania.....	1 mill on each \$1 of gross receipts of retailers; .5 mills on each \$1 of gross receipts of wholesalers.
South Dakota.....	.2% of gross receipts of retail sales of tangible personal property; extends to public utilities and amusements.
Utah.....	.2% of gross receipts of retail sales of tangible personal property; extends to public utilities, amusements, lodgings and meals.
Virginia.....	Tax on retailers of \$10 on sales of less than \$1,000, \$20 on sales between \$1,000 and \$2,000 and 13¢ per \$100 on sales in excess of \$2,000; tax on wholesalers of \$50 on each \$10,000 of purchasers and 13¢ per \$100 on those in excess of \$10,000.
Washington.....	.3% of gross receipts of retail sales of tangible personal property.
West Virginia.....	.5% of gross receipts of retailers; .15% of gross receipts of wholesalers; 1-6% of gross income of other kinds of business.
Wyoming.....	.2% of gross receipts of retail sales of tangible personal property; extends to public utilities, amusements, lodging and meals.

STATE FINANCES

passed. Indiana reduced the rate of its gross income tax on retailers from 1 to $\frac{1}{2}$ of 1 per cent. The rate was reduced from 3 to 2 per cent in Illinois (except on the gross receipts of public utilities) and South Dakota. There is a constitutional amendment pending in Illinois which would permit the exemption of food from the sales tax. Food and food products were exempted from the sales tax in North Carolina. Arkansas replaced its 2 per cent tax on the sales of tangible personal property, admissions, and services of public utilities by a gross receipt tax of 2 per cent on the sales of tangible personal property, services of public utilities, transmission services, printing and admissions.

USE TAXES

Use taxes have been enacted as a supplement to sales taxes. Since the Federal constitution forbids any state to levy a tax on the sale of goods purchased in another state, many states that have sales taxes have levied a tax on goods that are stored or consumed. Oklahoma adopted a use tax in 1941, and use taxes on fuel were adopted by Arizona, Arkansas, Maine, Minnesota, Missouri, North Carolina, South Dakota, Tennessee, Texas, Utah, Washington, and Wyoming. North Dakota repealed its \$50 exemption and re-enacted its use tax for an unlimited period. In most

states the tax rate is the same as that of the sales tax.

GASOLINE TAXES

Every state imposes a tax on gasoline. The tax rate was increased in Maine and Oklahoma. The increase in the rate in Maine must be approved by the voters. Temporary levies scheduled to expire were continued in Arizona, Florida, Kansas, Massachusetts, Maine, Missouri, Nebraska, New York, North Dakota, Ohio, Pennsylvania, South Dakota, Tennessee, Utah, Washington, and West Virginia. Fuel used for transporting school children is to be exempt in North Carolina and Oklahoma. Fuel used by counties on highways and bridge work is also to be exempt in Oklahoma. Tennessee exempted carload purchases by local units and governmental bodies, and Wyoming exempted fuel used for tractors. Many states tightened up their laws so that substitutes for gasoline, especially fuel oil, could not escape taxation. Eleven states have laws requiring revenue from the gasoline tax to be used for highway purposes. Iowa and West Virginia have proposed constitutional amendments to the same effect. In Illinois 2 per cent of the gasoline money allocated to municipalities may be used for pedestrian crossings on public highways; municipalities of less than 500,000 population may use

GASOLINE TAXES

State	Cents per Gallon	State	Cents per Gallon	State	Cents per Gallon
Alabama.....	6	Maine.....	4 $\frac{1}{2}$	Ohio.....	4
Arizona.....	5	Maryland.....	4	Oklahoma.....	5 $\frac{1}{2}$
Arkansas.....	6 $\frac{1}{2}$	Massachusetts.....	3	Oregon.....	5
California.....	3	Michigan.....	3	Pennsylvania.....	4
Colorado.....	4	Minnesota.....	4	Rhode Island.....	3
Connecticut.....	3	Mississippi.....	6	South Carolina.....	6
Delaware.....	4	Missouri.....	2	South Dakota.....	4
Florida.....	7	Montana.....	5	Tennessee.....	7
Georgia.....	6	Nebraska.....	5	Texas.....	4
Idaho.....	5	Nevada.....	4	Utah.....	4
Illinois.....	3	New Hampshire.....	4	Vermont.....	4
Indiana.....	4	New Jersey.....	3	Virginia.....	5
Iowa.....	3	New Mexico.....	5	Washington.....	5
Kansas.....	3	New York.....	4	West Virginia.....	5
Kentucky.....	5	North Carolina.....	6	Wisconsin.....	4
Louisiana.....	7	North Dakota.....	4	Wyoming.....	4

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such revenue for the construction or maintenance of highway lighting systems.

TOBACCO TAXES

Three states, Illinois, Maine, and Oregon, levied new taxes on cigarettes. In Illinois the revenue is to be used for emergency relief, in Maine it is to be used for old age assistance, and in Oregon one sixth of it is to be used for vocational training and five sixths for public welfare. Before the Oregon law becomes effective it must be approved by a referendum of the people. Taxes on cigarettes which were scheduled to expire were continued in Massachusetts, New York, Oregon, Pennsylvania, and Mississippi. Minnesota authorized localities to license and regulate the sale of cigarettes after Jan. 1, 1942; the annual license fee is not to exceed \$1200 a year. Oklahoma made various changes in its taxes on tobacco. The taxes on cigarettes were increased, a new tax was imposed on cigars, and other tobacco products were made subject to a stamp tax. Arkansas repealed its tax on cigars. North Dakota passed a law requiring all distributors and dealers to be licensed.

LIQUOR TAXES

Every state taxes liquor. Nine states have monopolies and sell liquor in state stores. In other states, liquor is taxed by a system of licenses and by a tax per gallon or per barrel, or a tax on sales. Taxes on liquor were increased in 1941 in Arkansas, Georgia, Idaho, Illinois, Indiana, Maine, North Dakota, South Carolina, Texas, and Utah. Temporary increases in rates were continued in Massachusetts, New York, and Pennsylvania. Taxes on wines were somewhat reduced in Delaware, and the annual license fee for manufacturers of liquor in Michigan was reduced from \$5,000 to \$1,000.

TAXES ON MOTOR VEHICLES

South Dakota reduced the registration fee from 3 to 2 per cent (to correspond to a similar decrease in the general sales tax). Oklahoma in-

creased license fees for motor vehicles. New Mexico and Texas levied a tax of 1 per cent and Oklahoma one of 2 per cent on the sales of motor vehicles or the use of motor vehicles purchased outside of the state. Many other states made changes in their laws taxing motor vehicles.

PROPERTY TAXES

Some steps were taken to solve the railroad problem in New Jersey where \$34,000,000 in railroad taxes had been delinquent since 1933. Interest and penalties on the \$34,000,000 were waived and the railroads were given 20 years in which to pay. A new law was passed providing for a reassessment of railroad property, and a new franchise tax of 3 per cent based on earnings was enacted, the proceeds of which are to be divided equally between the state and municipalities. (For additional developments, see "Land and Property Taxes," p. 237).

SEVERANCE TAXES

Severance taxes are found in over 20 states. Oklahoma continued its additional tax of $\frac{1}{8}\%$ per barrel on oil, Texas increased its rate to $4\frac{1}{2}\%$ per cent (or $4\frac{1}{8}\%$ per barrel if the value is under \$1 per barrel), and Illinois levied a tax of 3 per cent on the value of oil produced. Minnesota increased its occupational tax on iron ore and its tax on royalties. Texas raised the rates on the producers of natural gas and oil and increased the tax on sulphur.

PERSONAL INCOME TAXES

Sixteen of the 34 states with personal income taxes amended their laws. New Hampshire, Ohio, and Tennessee tax income from intangibles only, while Maryland, Massachusetts, Oregon, and Vermont tax intangibles at a higher rate than earned income. Pennsylvania and Washington have constitutional amendments pending which would authorize the levy of a personal income tax. The salaries of Federal employees are now subject to state income taxes in all states having such taxes. Idaho, North Dakota, and Utah passed laws in

STATE FINANCES

TAX RATES IMPOSED BY STATES ON TOBACCO¹

(As of Nov., 1941)

State	Cigarettes	Cigars	Other Tobacco Products
Alabama.....	3¢ per pack of 10 to 20 cigarettes*	\$1 to \$13.50 per 1,000; small cigars, 1¢ for each 10 cigars	Smoking tobacco, 1¢ for each 5¢ or fraction thereof of retail price; chewing tobacco and snuff, ½¢ on each 5¢ or fraction thereof of retail price
Arizona.....	2¢ on each 20	5¢ cigars, 1¢ each 3; over 5¢, 1¢ each; small cigars, 2¢ each 20	Tobacco and snuff; 1¢ per ounce; cavendish, plug or twist, ¼¢ per ounce.
Georgia.....	1½ mills each*	\$1 to \$13.50 per 1,000; small cigars, 1¢ per 10	Annual permit, \$35 if not subject to license tax
Illinois.....	1 mill each		
Iowa.....	1 mill each;* annual license, \$50-\$100		Cigarette papers; ½¢ per 50; * cigarette tubes, 1¢ per 50
Kansas.....	2¢ per 20; annual license, \$1-\$100		
Kentucky.....	1¢ per 10¢ of retail selling price		
Louisiana.....	2½ mills each	\$2 to \$27 per 1,000; small cigars, .75 per 1000	Smoking tobacco, 1¢ per 5¢ of retail price up to 10¢; over 10¢ retail price, 1½¢ per 5¢ of retail price; annual license, 0-\$5
Maine.....	1 mill each; annual license, \$1-\$25		
Maryland.....	Annual license, \$10-\$50		
Massachusetts..	1 mill each; annual license; \$1-\$100		
Mississippi.....	1/5¢ each	1¢ for each 5¢ of retail selling price	Smoking tobacco, 1¢ for each 5¢ of retail selling price; permit fees, \$5-\$100
New Hampshire	15% of retail price	15% of retail price	15% of retail price; annual license, \$1-\$25
New York.....	1¢ for each 10		
North Dakota..	1½ mills each*		Snuff, 2¢ per 1¼ ounce; cigarette papers, ½¢ per 50; annual license, \$5-\$10
Ohio.....	1¢ per 10; annual license, \$25-\$100		
Oklahoma.....	2½¢ per 10	\$5 to \$10 per 1,000; small cigars, 1¢ per 10	Smoking and chewing tobacco, 20% of list price; annual license, \$5-\$100.
Pennsylvania...	1¢ per 10; annual license, \$1		
Rhode Island...	1 mill each; annual license, \$1-\$25		
South Carolina..	1¢ per 5¢ of retail selling price	\$3-\$10 per 1,000; small cigars, 1¢ per 10	Snuff and chewing tobacco, 1¢ per 3 ounces; smoking tobacco, 1¢ per 5¢ of retail selling price
South Dakota...	1½ mills each;* annual license, \$5-\$20		Cigarette papers, ½¢ per 50; cigarette tubes, 1¢ per 50
Tennessee.....	1½ mill each*	\$1-\$13.50; small cigars, 1¢ per 10	Tobacco and snuff, 5% of retail sales price
Texas.....	\$1.50 per 1,000;* annual license, \$1-\$100		
Utah.....	1 mill each;* annual license, \$10		Cigarette papers, ½¢ per 50; cigarette tubes, 1¢ per 50
Vermont.....	1 mill each; annual license, \$1-\$25		
Washington.....	1 mill each;* annual license, \$1		
Wisconsin.....	1 mill each; annual license, \$50		Cigarette papers,* ½¢ per 50; cigarette tubes, 1¢ per 50.

¹ From *Tax Policy*, November 1941.

* Special rates for oversize cigarettes.

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PERSONAL INCOME TAXES

State	Rate	Maximum Rate Applies to Income Over	Exemptions		
			Single	Head of Family	Dependents
Alabama.....	1.5-5	\$ 5,000	\$1,500	\$3,000	\$300
Arizona.....	1-4.5	9,000	10 ^a	20 ^a	4 ^a
Arkansas.....	1-5	25,000	1,500	2,500	400
California.....	1-15	250,000	1,000	2,500	400
Colorado.....	1-6 ^b	10,000	1,000	2,500	400
Delaware.....	1-3	10,000	1,000	2,000	200
District of Columbia..	1-3	20,000	1,000	2,500	400
Georgia.....	1-7	20,000	1,000	2,500	400 ^c
Idaho.....	1.5-8	5,000	700	1,500	200
Iowa ^d	1-5	4,000	10 ^a	20 ^a	5 ^a
Kansas.....	1-4	7,000	750	1,500	200
Kentucky.....	2-5	5,000	1,000	2,500	400
Louisiana.....	2-6	8,000	1,000	2,500	400
Maryland ^e	{ 2% on ordin ary income 5% of invest ment income 6% on inter est 1.5% on ann uities & earned inc ome 3% on capit al gains 10% of tax		1,000	2,000	400
Massachusetts.....	{		2,000	2,500	250 ^f
Minnesota.....	1-10	20,000	10 ^a	30 ^a	5 ^a
Mississippi.....	3-8	10,000	1,000	2,500	400
Missouri.....	1-4	9,000	1,000	2,000	200
Montana.....	1-4	6,000	1,000	2,000	300
New Hampshire.....	Average rate on real estate income from intangibles		200	200	
New Mexico.....	1-4	100,000	1,500	2,500	200
New York.....	2-7	9,000	1,000	2,500	400
North Carolina.....	3-7	10,000	1,000	2,000	200
North Dakota.....	1-15	15,000	500	1,500	200
Ohio.....	5% on inco me from in- tangibles			None	
Oklahoma.....	1-9	8,000	850	1,700	300
Oregon.....	2-7 ^g	4,000	800	1,500	300 ^h
South Carolina.....	2-5 ⁱ	6,000	1,000	1,800	200
South Dakota.....	1-6	100,000	8 ^a	20 ^a	4 ^a
Tennessee.....	{ 4% on divid ends from corp. of whose prop- erty at lea st 75% is as- sessable 6% on other dividends and inter est			None	
Utah.....	1-5	4,000	600	1,200	300
Vermont.....	{ 2% on earne d income ^j 4% on inter est and divi- dends		1,000	2,000	250
Virginia.....	1.5-3	5,000	1,000	2,000	200
West Virginia.....	1-6	7,000	1,000	2,000	300
Wisconsin.....	1-7 ^k	12,000	8 ^a	17.50 ^a	4 ^a

^a Deduction from tax.

^b 2% surtax on resident's income from dividends, royalties and interest.

^c Denied deduction for minors having income exceeding \$400 from a trust.

^d In case of dependent father, mother, or grandparent taxpayer may substitute for the \$5 deduction from the tax a deduction of \$300 in computing net income.

^e 2½% of allowable deductions and personal exemptions are deducted from gross tax.

^f Exemptions apply against earned income only. In case of income derived from various intangibles there shall be exempt \$1,000 "received by a person whose total income from all sources does not exceed \$1,000 during the year; but said exemption shall not be given to any married person if the combined income of both husband and wife from all sources exceeds \$1,500."

^g Surtax of 2% on interest and dividends. Taxpayer's combined normal tax and surtax shall not exceed 8% of his net income.

^h For surtax purposes, personal exemptions are \$500 for a single person, \$800 for a married person or head of a family.

ⁱ Plus surtax on interest and dividends of 3% on income between \$500 and \$800, 4% on income between \$800 and \$12,000, 5% on income over \$12,000. Exemption for surtax only is \$500.

^j If income is derived wholly from interest and dividends, personal exemptions shall be \$400 for single persons and \$800 for married persons except when entire net income exceeds \$1,500 for single persons and \$3,000 for married persons.

^k Plus certain temporary additional levies, including 60% of normal tax.

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1941 making such salaries taxable; Idaho also made the salaries of its own officials taxable. New York dropped its emergency levy of 1 per cent, Maryland, North Dakota, and South Dakota lowered their rates, West Virginia raised her rates, and Massachusetts and Wisconsin extended their temporary emergency rates. California followed Federal practice in permitting persons receiving a lump sum payment of income covering five years or more to pay no more tax than would have been due had such income been received in equal proportions each year.

South Dakota and Vermont liberalized their exemptions, while Georgia made hers somewhat less liberal. Wisconsin, one of the few states that allows deduction of both state and Federal taxes, limited the deduction for Federal income taxes to 3 per cent of net income. Interest on United States securities will no longer be exempt from gross income in Georgia. Both Kansas and Vermont made changes in regard to deductions for travelling expenses. The Kansas legislature overruled the regulation of the Tax Commission which did not permit state legislators to deduct living expenses while away from home. Any personal or travelling expenses when away from home on business are deductible in Vermont. The Idaho tax is not to apply to income of residents from sources outside of the state. Laws providing for reciprocity in the taxation of income earned by non-residents or of income of residents derived from another state were passed in Iowa, North Carolina, Minnesota, and Montana. In Colorado a non-resident may now obtain a non-resident certificate for \$25 (\$15 for renewal) which will exempt the holder from all gift and income taxes of the state except a tax on income earned in Colorado. Provision was made for installment payment of taxes in Maryland, New York, West Virginia, and Washington.

TAXES ON BUSINESS

New formulas for allocating corporate income among states were

adopted in Georgia, Oklahoma, South Carolina, and North Carolina. New York's tax of 4 per cent on the income of unincorporated business and its additional emergency tax of 1½ per cent on corporate income were extended for another year, as was the emergency tax of 10 per cent on corporate income in Massachusetts. Arkansas repealed its exemption of \$1,500, and substituted a graduated rate for its flat rate of 2 per cent. Various laws were passed dealing with deductions. Wisconsin limited deductions for Federal income, excess profits and defense taxes to 10 per cent of net income. Maryland made deductions for gifts by corporations allowable on the same basis as those by individuals, but allowed no deduction for the excess profits tax. The corporation tax in Maryland was made applicable to corporations operating on Federal property. Arkansas and Georgia will allow no deduction for dividends received from another corporation. Maryland, Minnesota, and South Carolina will allow deductions for the amortization of war facilities. In Georgia domestic and domesticated foreign corporations are to be taxed on the same basis. The income tax in Minnesota has been extended to apply to building and loan associations. Texas levied a transfer tax of 3¢ per \$100 of the face value of stock or 3¢ per share in cases where shares have no par value; the rate of the franchise tax was also changed to \$1 on each \$1,000 of capital stock. Ohio levied an annual license fee of \$1.25 per \$1,000 of capital used in the state, with a minimum fee of \$10 and a maximum one of \$15,000. New York extended its additional tax on stock transfers.

TAXATION OF BANKS

Banks continue to be taxed as in previous years upon their capital stock or upon their net income. Two more states have been added to those taxing banks on net income, making 15 states in all. Minnesota levied a tax of 8 per cent and North Dakota one of 4 per cent on the net income of banks.

VII. PUBLIC FINANCE AND TAXATION

TAXES ON NET INCOME OF CORPORATIONS

State	Rate in %	State	Rate in %	State	Rate in %
Alabama.....	3 ^a	Maryland.....	1½	New York.....	6 ⁱ
Arizona.....	1-5	Massachusetts.....	2½ ^f	North Carolina.....	6
Arkansas.....	1-5	Minnesota.....	6 ^g	North Dakota.....	3-6
California.....	4 ^b	Mississippi.....	3-8	Oklahoma.....	6
Colorado.....	4	Missouri.....	2	Oregon.....	8 ^j
Connecticut.....	2 ^e	Montana.....	3 ^h	Pennsylvania.....	7
District of Columbia	5	New Hampshire.....	Average property tax rate on intangible income	South Carolina.....	4½ ^k
Georgia.....	5½ ^d			South Dakota.....	1-8
Idaho.....	1½-8			Tennessee.....	3¾ ^l
Iowa.....	2			Utah.....	3 ^m
Kansas.....	2			Vermont.....	2
Kentucky.....	4			Virginia.....	3
Louisiana.....	6 ⁱ	New Mexico.....	2	Wisconsin.....	2-6 ⁿ

^a Exemption of \$1,000.

^b Minimum tax of \$25.

^c \$10 minimum; tax is not to be less than one mill on sum of interest bearing debt, capital stock, surplus, undivided profits, and reserves, less deficit and stocks and securities held.

^d Tax is not to be less than 2 per cent of entire net income plus compensation to officers and to stockholders owning in excess of 5 per cent of the stock after deducting \$10,000 and deficit if any.

^e Exemption of \$3,000.

^f Minimum is not to be less than 1/20 of 1 per cent on capital stock.

^g Exemption of \$1,000.

^h Minimum tax of \$5.

ⁱ Minimum tax of \$25 or one mill per \$1 of capital stock.

^j Minimum tax of \$10.

^k Minimum tax of 3 per cent of net income plus salaries and compensation paid to officers and to any stockholder owning in excess of 5 per cent of capital stock after deducting \$6,000 and any deficit reported for the year.

^l Or tax on capital stock, whichever is greater.

^m Minimum tax of \$10; tax is not to be less than 1/20 of 1 per cent of value of tangible property.

ⁿ Plus certain surtaxes.

TAXES ON THE NET INCOME OF BANKS

State	Rate %
Alabama.....	6
California.....	4-8
Colorado.....	6
Connecticut.....	2
Idaho.....	1.5-8
Massachusetts.....	6
Minnesota.....	8
New York ^a	4½
North Dakota.....	4
Oklahoma.....	1-6
Oregon.....	8
South Carolina.....	4½
South Dakota.....	3
Utah.....	3
Wisconsin ^b	2-6 & surtax

^a Does not apply to savings banks.

^b Does not apply to mutual savings banks.

CHAIN STORE TAXES

A new type of chain store tax has been passed in Utah, and is to be voted on by the people in November, 1942. Stores opened after July 1, 1941, will pay ten times the rates applicable

to stores already in existence. The maximum rate applies to stores in chains of 500 or more stores, including stores any place in the United States. Florida repealed its unconstitutional gross receipts tax on chain stores and revised its schedule of rates. It also levied a tax of \$10 per \$1,000 of merchandise on hand or in warehouses at the time of inventory, with the first \$1,000 of inventory being exempted. Colorado and Texas modified their laws so that a "store" excludes gasoline filling stations dealing primarily in petroleum products. Religious book stores were also exempted in Texas. The chain store tax in Tennessee was made applicable to retail stores with group purchasing and common management, common ownership of a majority of the stock of separate corporations, or common ownership of a majority interest. Iowa revised its law so that the tax does not apply to stores when all the stores of a chain are owned, operated,

STATE FINANCES

TAXES ON CHAIN STORES

State	Maximum Tax	Applicable to Each Store Above
Alabama.....	\$112.50	20
Colorado.....	300	24
Delaware.....	\$10 plus 10¢ for each aggregate dollar in excess of \$5,000.	100 of cost value of goods
Florida.....	400	15
Georgia.....	200	40
Idaho.....	500	19
Indiana.....	150	20
Iowa.....	155	50
Kentucky.....	200	250
Louisiana.....	550	500
Maryland.....	150	20
Michigan.....	250	25
Minnesota.....	350	150
Mississippi.....	300	250
Montana.....	200	4
North Carolina.....	250	200
South Carolina.....	150	30
South Dakota.....	150	50
Tennessee.....	\$3 for each floor space	100 square feet of
Texas.....	750	1
West Virginia.....	250	50
Utah.....	500	75
		500

(For the year's developments in chain store taxes, see "Corporation and Bank Taxes," p. 241).

or located in unincorporated villages and when no store is more than eight miles distant from every other store so owned and operated. Taxes on chain stores generally begin with a tax of \$1 to \$10 on the first or second store in the chain and increase as the number of stores in the chain in-

creases. The adjoining table indicates the maximum tax levied in each state.

POLL TAXES AND MISCELLANEOUS LEVIES

All poll taxes in Florida were abolished, and the per capita road tax in Arkansas was repealed. Texas eliminated the payment of city poll taxes as a prerequisite for voting in any election except city elections. The levy of a poll tax is required in 13 states; it is forbidden by the state constitution in Utah, Oregon, Ohio, and Maryland.

Maryland reduced its 1 per cent gross receipts tax on admissions to $\frac{1}{2}$ per cent, and imposed certain license fees on coin-operated vending machines. Illinois imposed a tax of 2 per cent on all sums wagered at horse races. Both Delaware and Florida raised their rates on horse racing. Washington imposed a tax of 10 per cent on the gross receipts of operators of certain mechanical devices and 20 per cent on games of pure chance. North Dakota and South Carolina imposed license fees on the use of vending machines. Missouri levied a tax on apples, and Arkansas and Texas a tax on milled rice, the proceeds in each case to be used for advertising the product taxed. New Mexico repealed its tax on oleomargarine. Tennessee increased its license fees for manufacturers, jobbers, and

ESTATE TAXES

State	Rate	Exemption
Alabama.....	4/5-16	\$100,000
Arizona.....	4/5-16	100,000
Colorado.....	4/5-16	100,000; tax levied only if estate exceeds \$250,000.
Florida.....	4/5-16	100,000
Georgia.....	4/5-16	100,000
Mississippi.....	4/5-16	50,000
New York.....	1-20	20,000 to husband and wife; 2,000 to ancestors and descendants 5,000 to minor descendants
North Dakota.....	2-23	20,000 to husband and wife 2,000 to ancestors and descendants 2,000-5,000 to minor descendants
Oklahoma.....	1-10	15,000
Oregon.....	1-15	10,000
Rhode Island.....	1	10,000
Utah.....	3-10	10,000

(For developments in estate inheritance and gift taxes, see "Estate and Inheritance Taxes," p. 243).

VII. PUBLIC FINANCE AND TAXATION

retailers of oleomargarine. Oklahoma imposed a license fee upon itinerant merchants. Massachusetts levied an excise tax of 5 per cent on meals costing \$1.00 or more; the revenue from this tax and from the surtax on income and estate taxes is to be used for old age assistance.

DEBT

Twenty-nine states reduced their net debt in the fiscal year 1939. Florida was the only state having no debt. Arkansas had the largest per capita debt. About one-half of all

outstanding debt had been incurred for highways.

REFERENCES

Information presented here and further information can be found in *Financial Statistics of States: 1939*, *State and Local Government Debt: 1940*, *State Tax Collections: 1941*, all by the Bureau of the Census, Department of Commerce; *Tax Digest*, October and November 1941; *Tax Policy*, March, April, September and November 1941; *Taxes*, July 1941; and *Tax Systems of the World*, Commerce Clearing House, Inc.

MUNICIPAL FINANCE

By H. K. ALLEN

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GENERAL

An examination of the financial condition of municipalities for the year 1941 shows definite signs of a continuation of the improvement which began back in 1934. This further improvement is indicated especially by a decline in tax delinquencies and a decrease in the number of defaults. The decline in tax delinquencies resulted from the general improvement in business conditions and from the activities of various Federal agencies. The reduction in the number of defaults is largely attributable to the improvement in tax collections.

EXPENDITURES

The most recent year for which the comprehensive statistics of the Bureau of the Census are available is for 1938. Unfortunately, the figures for 1932 to 1938 are limited to cities having a population of over 100,000. By Executive Order of June 10, 1933, the annual collection and compilation of financial statistics was limited to cities of over 100,000 population.

PER CAPITA EXPENDITURES

While some of the absolute expenditures just noted may appear

large, yet too great significance should not be attached to them. The size of an expenditure becomes intelligible in terms of service when one discovers the number among whom it is divided. The per capita expenditures of cities, both as a whole and for particular items, have varied greatly from time to time, but the general tendency has been to increase. The table (page 228) shows the change in per capita expenditures for selected years.

IMPORTANCE OF DIFFERENT MUNICIPAL EXPENDITURES

There is a wide difference in the importance attached to the different functions performed by municipalities. While over a period of years there has been some change in the relative importance of some of the items, it is interesting to note that expenditures for education have always been far larger than any other, and that the relative importance of this item up to 1932 tended to increase with the years. Protection and highways have commanded a smaller percentage of the expenditures than formerly. The most significant development in recent years, it will be

MUNICIPAL FINANCE

MUNICIPAL EXPENDITURES

(000 omitted)

Operation and Maintenance, by Major Functions

Year	Total	General Government	Protection to Person and Property	Health and Sanitation	Highways
1938 ¹	\$2,167,459	\$163,089	\$346,168	\$136,956	\$111,979
1937 ¹	2,025,052	159,557	330,107	127,634	106,242
1936 ¹	1,838,803	150,213	317,154	141,207	108,910
1935 ¹	1,797,798	139,144	307,733	135,892	111,358
1934 ¹	1,744,975	135,766	298,758	134,296	111,306
1933 ¹	1,727,043	142,296	298,852	138,921	110,652
1932 ¹	1,806,517	149,909	328,797	160,010	127,670
1929	1,730,288	140,521	339,816	174,858	147,375
1927	1,562,615	136,848	315,362	160,259	137,892
1924	1,287,484	111,856	259,275	130,388	109,807
1922	1,155,691	105,174	234,199	115,488	98,763
1919	697,319	72,585	146,763	75,847	65,003
1915	546,568	62,793	120,696	55,758	60,615
1911	452,899	53,766	106,120	45,691	52,214
1907	367,367	42,703	87,885	36,899	42,718
1903	278,173	30,842	71,020	25,807	34,208

¹ Statistics for 1932 to 1938 are for cities having a population in 1930 over 100,000. All other data are for cities over 30,000. Because of some changes in the basis of classification, the figures for 1937 and 1938 are not strictly comparable with those for earlier years. Beginning with 1937, the financial statistics of public-service enterprises were reported separately from those of general government.

Year	Charities, Hospitals, and Corrections	Schools	Libraries	Recreation	Miscellaneous
1938	\$508,134	\$625,032	\$25,519	\$64,946	\$185,637
1937	451,472	596,129	24,101	58,132	171,678
1936	366,466	571,922	21,119	52,303	109,504
1935	337,990	545,718	20,840	47,943	151,180
1934	345,214	526,864	20,271	48,306	124,194
1933	292,212	542,034	19,744	60,097	122,235
1932	234,419	629,353	.....¹	63,117	113,242
1929	116,147	622,587	23,029	61,863	94,091
1927	99,806	560,668	20,167	53,839	77,731
1924	79,239	475,725	15,782	41,819	63,590
1922	76,627	422,843	14,326	38,703	49,603
1919	53,262	216,701	9,079	24,204	33,870
1915	38,285	162,332	7,134	20,416	18,535
1911	30,647	127,604	5,939	17,114	13,801
1907	24,408	102,395	4,989	11,794	13,572
1903	18,280	80,853	4,067	7,457	5,634

¹ Expenditures for libraries and schools combined in 1932.

noted, is the increase in expenditures for charities, hospitals, and corrections. The following table shows the relative importance of the different services over a period of years:

The expenditures just described are designated as "cost payments" by the Census Bureau. In addition to these are a number of other expenditures, the most important of which are for interest, outlays, and payments for operation and maintenance of public-service enterprises. The interest pay-

ments are for the funded and floating debt, special assessment loans, and other minor types of borrowing. In 1938 the total interest payment was \$207,135,000; the corresponding figure for 1937 was \$336,063,000.

Expenditures for outlays comprise the amounts paid for the acquisition and construction of more or less permanent improvements, including payments for additions made to those previously acquired or constructed. Such payments in 1938 amounted to

VII. PUBLIC FINANCE AND TAXATION

Year	Total	General Government	Protection to Person and Property	Health and Sanitation	Highways	Charities, Hospitals, and Corrections	Education Schools*	Libraries**	Recreation**	Miscellaneous*
1938	\$57.36	\$4.32	\$9.16	\$3.62	\$2.96	\$13.45	\$16.54	\$.68	\$1.72	\$4.92
1937	53.75	4.24	8.77	3.38	2.82	11.98	15.82	.64	1.54	4.66
1936	48.83	3.99	8.43	3.75	2.89	9.73	15.19	.56	1.39	2.91
1935	47.78	3.70	8.18	3.61	2.76	8.98	15.05	...	1.27	4.02
1934	46.43	3.61	7.95	3.57	2.97	9.18	14.56	...	1.29	3.30
1933	46.08	3.80	7.98	3.71	2.95	7.80	14.99	...	1.60	3.26
1932	47.87	3.97	8.71	4.24	3.38	6.21	16.68	...	1.67	3.00
1929	43.45	3.66	8.46	4.33	3.70	2.78	16.14	.59	1.55	2.25
1927	40.77	3.46	8.13	4.13	3.60	2.49	15.08	.53	1.40	1.94
1924	35.61	3.01	7.10	3.55	3.07	2.08	13.52	.44	1.15	1.67
1922	33.15	2.94	6.66	3.25	2.87	2.08	12.50	.41	1.09	1.34
1919	21.63	2.22	4.53	2.34	2.04	1.59	6.88	.28	.74	1.01
1915	18.45	2.10	4.06	1.86	2.06	1.26	5.58	.24	.68	.61
1911	17.62	2.08	4.12	1.77	2.04	1.17	5.04	.23	.65	.53
1907	15.95	1.86	3.80	1.59	1.91	1.05	4.42	.21	.51	.59
1903	13.19	1.46	3.35	1.21	1.64	.86	3.86	.10	.35	.27

* Payment for pensions are included in column "Miscellaneous" for the years 1911 to 1928 inclusive; for the years 1903 to 1909 inclusive, they are included with expenses of police, fire, and school departments.

** Payments for expenses of art galleries and museums are included in column "Recreation" for the years 1911 to 1928 inclusive; for the years 1903 to 1909 inclusive, they are included with the expenses of libraries; expenditures for libraries and schools are combined for the years 1932 to 1935.

PERCENTAGE OF EXPENDITURES FOR DIFFERENT FUNCTIONS

Year	General Government	Protection to Person and Property	Health and Sanitation	Highways	Charities, Hospitals, Corrections	Education Schools*	Libraries*	Recreation	Miscellaneous
1938	7.5	16.0	6.3	5.2	23.4	28.8	1.2	3.0	8.5
1937	7.9	16.3	6.3	5.2	22.3	29.4	1.2	2.9	8.5
1936	8.2	17.2	7.7	5.9	19.9	31.1	1.1	2.8	6.0
1935	7.7	17.1	7.5	6.2	18.8	31.6	...	2.7	8.4
1934	7.8	17.1	7.7	6.4	19.8	31.4	...	2.8	7.1
1933	8.2	17.3	8.1	6.4	16.9	32.5	...	3.5	7.1
1932	8.3	18.2	8.9	7.1	13.0	34.8	...	3.5	6.3
1929	8.4	19.5	10.0	8.5	6.4	37.2	1.4	3.6	5.2
1927	8.5	20.0	10.1	8.8	6.6	37.0	1.3	3.4	4.8
1924	8.5	19.9	10.0	8.6	5.9	38.0	1.2	3.2	4.7
1922	8.9	20.1	9.8	8.7	6.3	37.7	1.2	3.3	4.0
1919	10.2	21.0	10.8	9.4	7.3	31.8	1.3	3.4	4.7
1915	11.4	22.0	10.1	11.2	6.8	30.2	1.3	3.7	3.3
1911	11.8	23.4	10.1	11.6	6.6	28.6	1.3	3.7	3.0
1907	11.7	23.8	9.9	12.0	6.6	27.7	1.3	3.2	3.6
1903	11.1	25.3	9.2	12.4	6.5	29.3	1.5	2.7	2.1

* Percentages for schools and libraries combined for the years 1932 to 1935.

\$377,171,000 in comparison with \$535,-014,000 for the preceding year.

INCOME AND PAYMENTS OF PUBLIC-SERVICE ENTERPRISES: 1938

The receipts and expenditures of public-service enterprises are shown in the table next page.

The water-supply system is the most important public service enterprise operated by American cities. Of the 94 municipalities for which the census data are available, 87 had water-supply systems in 1938. Because of the numerous factors involved, no attempt can be made, from the data

MUNICIPAL FINANCE

(thousands)

Type of Enterprise	Income ¹	Payments ²
Water-supply.....	\$199,016	\$209,277
Electric light and power.....	51,052	61,000
Transit.....	99,838	108,495
Gas-supply.....	15,956	14,607
Ports, harbors, docks and wharves.....	29,420	25,879
Airports.....	10,567	18,176
Ferries.....	4,892	4,808
All other.....	10,535	11,695
Total.....	\$421,277	\$453,938

¹ Includes \$70,158,000 contributions received from the revenues of the general government of the cities.

² Includes \$148,063,000 for capital outlays, and \$29,112,000 contributions made by the enterprises to the general funds of cities.

presented, to appraise the success of public-service enterprises.

SOURCES OF REVENUE

Property Taxes.—The revenue of cities arises from a number of sources. In most cities more than 90 per cent of the funds which go into the general revenue fund come from the general property tax. This is a tax levied against real and personal property. In addition to the general property tax, the Census Bureau designates certain taxes as special property taxes. Such include taxes upon the capital stock

of corporations, upon savings banks and other financial institutions, and upon insurance companies. Included in this, also, would be taxes levied upon mortgages at time of recording, taxes upon incomes and estates, upon investments, and a wide range of specific taxes.

Poll and Business Taxes.—In many cities, also, some form of poll tax continues to be used, although such taxes are much less important than formerly. No generalization can be made as to method of levy since this varies greatly from city to city. In addition, business and non-business license taxes make up a large group of levies upon different types of business activities, some of which, of course, are levied primarily for regulative purposes. The latter include such levies as those upon dogs, dance halls, etc. Receipts from special assessments constitutes an important item, but they do not enter the general revenue fund. In some places at a particular time subventions and grants are an important source of income, while in some cities, also, the earnings from public enterprises are not unimportant. The relative importance of the major sources of revenue over a period of years is shown in the following table:

PERCENTAGE OF RECEIPTS FROM DIFFERENT SOURCES OF REVENUE

Year	The General Property Tax	Other Taxes	Special Assessments	Subventions and Grants, Donations and Pension Assessments	Earnings of Public Service Enterprises*	Other Revenues
1938	64.7	8.1	1.1	16.1	....	10.0
1937	65.2	8.0	1.2	16.4	....	9.2
1936	59.7	7.9	1.6	14.3	10.4	6.1
1935	60.2	6.8	1.7	15.6	9.5	6.2
1934	62.6	5.3	2.2	13.5	9.8	6.6
1933	64.3	4.3	2.4	12.3	9.5	7.2
1932	66.2	4.7	3.9	8.5	9.3	7.4
1929	64.7	6.4	7.2	5.8	9.8	6.1
1927	66.1	5.7	7.7	4.9	9.6	6.2
1924	66.1	5.7	5.9	5.3	10.3	6.8
1922	66.9	5.2	4.8	5.9	9.0	8.2
1919	66.0	7.6	5.6	4.1	10.2	6.4
1915	62.4	7.8	8.5	4.2	10.0	6.9
1911	61.9	8.7	8.4	4.6	10.6	5.8
1907	59.4	10.6	8.2	4.8	11.2	5.8
1903	61.4	9.8	7.6	4.3	11.5	5.5

* Listed separately in 1937 and 1938.

VII. PUBLIC FINANCE AND TAXATION

PER CAPITA TAX RECEIPTS FROM DIFFERENT SOURCES

That the tax burden imposed by cities has been increasing much more rapidly than population is readily seen

when one notes the change in the per capita amounts collected from different sources over a period of years, as shown in the adjoining table:

Year	Total	The General Property Tax	Other Taxes	Special Assessments	Subventions and Grants, Donations, and Pension Assessments	Earnings of Public Service Enterprises*	Other Revenues
1938	\$74.28	\$48.02	\$5.97	\$.82	\$11.99	\$....	\$7.48
1937	71.89	46.91	5.76	.89	12.77	....	5.56
1936	76.83	45.83	6.03	1.21	10.95	8.03	4.78
1935	77.64	46.72	5.26	1.32	12.10	7.37	4.87
1934	72.13	45.17	3.77	1.61	9.71	7.09	4.78
1933	66.88	43.02	2.88	1.59	8.25	6.36	4.78
1932	68.82	45.57	3.24	2.70	5.84	6.42	5.03
1929	69.63	45.07	4.43	5.01	4.02	6.82	4.28
1927	69.77	46.09	3.95	5.36	3.40	6.67	4.29
1924	58.41	38.59	3.33	3.43	3.12	6.00	3.96
1922	53.57	35.85	2.80	2.58	3.13	4.83	4.38
1919	35.26	23.29	2.68	1.98	1.43	3.61	2.27
1915	30.00	18.73	2.36	2.54	1.26	3.03	2.08
1911	28.07	17.37	2.44	2.35	1.30	2.98	1.63
1907	24.67	14.64	2.63	2.02	1.18	2.77	1.43
1903	21.14	12.98	2.06	1.60	.91	2.42	1.16

* Listed separately in 1937 and 1938.

MUNICIPAL INDEBTEDNESS

Receipts from sources of revenue may either just pay expenses, more than pay expenses, or fail to pay them. In many cases the administrators of the finances have planned for a surplus but because of a shrinkage in revenue have had to resort to borrowing.

In the calculations of the Census Bureau, municipal indebtedness is divided into two distinct groups, funded debt and floating debt. The former includes all obligations represented by formal investments which have a number of years to run and for the redemption of which no assets other than a sinking fund or earnings of public-service enterprises have been specifically designated. The latter, on the other hand, includes such indebtedness as is evidenced by warrants, accounts payable, and other short-term obligations. The gross indebtedness is, of course, the total amount, while the net indebtedness is derived by subtracting from this the value of the assets in the sinking fund. The following table shows the total indebtedness, the sinking fund

assets, and the net indebtedness for certain years. The latest statistics that are available for 1931 to 1938 give only net indebtedness.

MUNICIPAL BOND ISSUES

An improvement in the demand for municipal securities since 1933 is indicated by the following table which shows the aggregate disposals of long-

(000 omitted)

Year	Total First Ten Months	Year	Total First Ten Months
1941	\$ 823,115	1927	\$1,297,029
1940	954,593	1926	1,149,105
1939	956,386	1925	1,174,724
1938	800,606	1924	1,280,504
1937	769,778	1923	850,952
1936	955,500	1922	990,188
1935	973,869	1921	868,392
1934	725,660	1920	570,109
1933	392,580	1919	581,871
1932	701,938	1918	245,789
1931	1,156,129	1917	402,828
1930	1,211,857	1916	402,548
1929	1,055,135	1915	434,829
1928	1,094,074	1914	423,171
		1913	327,902

Source: *Commercial and Financial Chronicle*.

MUNICIPAL FINANCE

(000 omitted)

Year	Funded or Fixed, and Floating Debt	Sinking Fund Assets		Net Debt	
		Amount	Per Capita	Amount	Per Capita
1938.....	\$.....*	\$.....*	\$.....*	\$6,470,850**	\$171.23
1937.....	.....*	.....*	.....*	6,401,987**	189.93
1936.....	.....*	.....*	.....*	6,331,516**	168.13
1935.....	.....*	.....*	.....*	6,397,603	170.03
1934.....	.....*	.....*	.....*	6,380,478	169.76
1933.....	.....*	.....*	.....*	6,360,586	169.70
1932.....	.....*	.....*	.....*	6,289,078	166.66
1930.....	7,808,379	1,840,816	47.20	5,967,563	153.02
1929.....	7,233,151	1,703,316	44.45	5,529,835	144.33
1927.....	6,456,781	1,513,273	41.10	4,943,507	134.27
1924.....	5,057,023	1,215,043	34.82	3,481,980	110.09
1922.....	4,332,114	1,051,468	31.27	3,280,645	97.57
1919.....	3,352,688	811,516	25.93	2,541,172	81.18
1915.....	2,866,008	620,102	21.50	2,245,906	77.86
1911.....	2,305,059	496,230	11.52	1,808,828	67.52
1907.....	1,657,320	362,441	15.68	1,808,878	56.04
1903.....	1,223,101	290,096	13.90	933,004	44.71

* Not available for years 1932 to 1938.

** Exclusive of floating debt.

term obligations by states and municipalities for the first ten months of each year for a series of years:

FEDERAL EMERGENCY ADMINISTRATION OF PUBLIC WORKS

The table showing municipal bond issues does not include the extension grants made to municipalities for public-works projects by the Federal Emergency Administration of Public Works. This agency was created by the National Industrial Recovery Act which became effective June 16, 1933. Under Title II of this act, authority was granted to the Administrator to furnish grants, not subject to repayment, for 30 per cent of the total expenditures incurred for the payment of labor and material costs on approved public-works projects. Moreover, the agency was authorized to accept 4 per cent general obligation or revenue bonds of the municipalities as security for the loan portion of the allotment. In 1934 Congress authorized the Reconstruction Finance Corporation to purchase marketable securities from the Public Works Administration and provided that moneys realized by the Public Works Administration from such sales might be used for making additional loans, but not grants, in aid of non-Federal public-

works projects under Title II of the N. I. R. A.

In addition to the program of public works administered under Title II of the National Industrial Recovery Act, the Public Works Administration carried on a separate program pursuant to the Emergency Relief Appropriation Act of 1935. Under the latter act the amount of the grant was fixed by administrative determination at 45 per cent of the cost of the project, with a corresponding reduction in the amount to be furnished by the applicant. Provision was made under this act for the sale of bonds acquired as collateral for municipal loans either on the open market or to the Reconstruction Finance Corporation, the proceeds to be used only for the making of loans. In practice the sales have been confined to the Reconstruction Finance Corporation which, in turn, has sold the securities on the open market.

The Public Works Administration since its creation has pledged itself to buy approximately \$1,000,000,000 worth of bonds. The major portion of the amount acquired by the Public Works Administration has been placed with the Reconstruction Finance Corporation and resold to the general public. Total allotments for all non-Federal projects for the years

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1933 to 1937, inclusive, totaled \$1,450,-952,783. Of this amount, \$592,325,453 consisted of loans, and \$858,627,330 was in grants.

TAX DELINQUENCY

Tax delinquency is a natural phenomenon of a business depression. And a rising trend of tax delinquency

inevitably cripples municipal functions and weakens municipal credit. Dun and Bradstreet has made a study of the trend of median year-end tax delinquency in 150 cities over 50,000 population for the nine-year period from 1930 to 1940. The following percentages show the median delinquency on the current tax levy at the end of each fiscal year:

1930	1931	1932	1933	1934	1935	1936	1937	1938	1939	1940
10.15%	14.60%	19.95%	26.35%	23.05%	18.0%	13.9%	11.3%	10.7%	9.25%	8.70%

These figures show a substantial gain in collections since 1933, and delinquency in 1940 was lower than it was in 1930. Only fragmentary data are available for 1941, but it is believed that little change has occurred.

DEBT DEFAULTS

Heavy tax delinquency in recent years naturally resulted in a large number of defaults. The *Bond Buyer* estimated, with certain reservations, that 310 cities and towns were in default on their bonds on Dec. 1, 1941. This represents a substantial reduction from the previous year when 522 incorporated places were in default. The following states, according to the *Bond Buyer*, had the largest number of defaults:

Florida.....	76	Oklahoma.....	28
North Carolina..	17	New Jersey.....	18
Texas.....	37	Colorado.....	11
Michigan.....	34	Pennsylvania....	12

It is significant to note that Florida and North Carolina, included in the above group, had large increases in local indebtedness between 1912 and 1932, the percentages being 2,779.01 and 1,300.8 respectively. The indebtedness of Maine during the same period increased only 73.2 per cent, while that of Massachusetts increased only 99.2 per cent. Maine had three incorporated places in default in 1941 and Massachusetts had none.

While no data are available regarding the volume of municipal bonds in default, it can reasonably be stated that the volume of such defaults declined during the past year.

DEBT ADJUSTMENT LEGISLATION

For the purpose of aiding municipalities which are in default on their obligations, various states have recently passed state receivership and debt adjustment acts. Boards or commissions have been established to supervise local indebtedness in general, to supervise the refunding of municipal bonds, and to act as receivers in event of failure to meet debt service.

A Federal Municipal Bankruptcy Act was enacted May 24, 1934. This act, which was declared unconstitutional by the Supreme Court of the United States in May, 1936, was designed to enable any taxing district, with the consent of its creditors and the approval of a Federal District Court, to adjust its debt structure. According to the *Bond Buyer*, only 27 cities, one county, one school district, 41 irrigation districts, and one road district filed petitions under the Municipal Bankruptcy Act during the two years which the law was in effect.

On Aug. 16, 1937, President Roosevelt signed a new Municipal Bankruptcy Act, designed to replace the original measure which was declared unconstitutional. The present law is similar in its provisions to the invalidated law. It provides a procedure whereby insolvent taxing agencies, such as local drainage, levee, irrigation, road, and sewer districts, as well as towns, boroughs, and municipalities, may effect compositions with their creditors. These compositions would be approvable only when the districts or agencies filed voluntary

INCOME AND PROFIT TAXES

proceedings in bankruptcy accompanied by plans approved by 51 per cent of all the creditors of the district or town. The plan of composition can not be confirmed unless accepted in writing by creditors holding at least 66 2/3 per cent of the aggregate amount of the indebtedness of the petitioning district or taxing agency, unless the judge is satisfied that the

taxing district was authorized by law to carry out the plan and there had been a finding by the Court that the plan was fair, equitable, and for the best interests of the creditors. According to the *Bond Buyer*, 231 municipalities have filed petitions under the 1937 Federal Municipal Bankruptcy Act.

INCOME AND PROFITS TAXES*

BY LUCY WINSOR KILLOUGH
PROFESSOR, WELLESLEY COLLEGE

FEDERAL REVENUE ACTS

Two acts dealing with income and profits taxes were passed in 1941—Excess Profits Tax Amendments of 1941, Public Law 10, 77th Congress approved March 7, and the Revenue Act of 1941, Public Law 250, 77th Congress approved Sept. 20. The Excess Profits Tax Amendments of 1941 were made effective as of the date of enactment of the Excess Profits Tax Act of 1940. They consisted mainly of clarifications of the original act and made no basic changes. The major part of the amendments of 1941 consisted of Sections 3, 4, 5, 6, and 11 dealing respectively with abnormal deduction in base period, computation of average base period net income, abnormalities in income in taxable period, abnormal base period earnings, and adjustment in case of inconsistent position.

The Revenue Act of 1941 is a comprehensive revision of existing revenue acts. From April to the middle of June the discussions of the bill in the House Ways and Means Committee were extensively reported. There were three proposed plans which were given wide circulation during this period. The first two were made public on April 25 and became known as the Treasury plan and the Stam plan. The latter was presumably the plan of the committee as it had been prepared by Colin B. Stam, chief consultant of the Joint

Committee on Internal Revenue Taxation. The third plan was known as the Henderson-Eccles plan because its main provisions were proposed to the Committee on May 7 by Leon Henderson, administrator of Price Control, and Marriner S. Eccles, chairman of the Board of Governors of the Federal Reserve System.

Each of the proposals was intended to raise well over \$3,000,000,000 of additional revenue. Increases in personal and corporate income taxes, excess profits taxes, estate and gift taxes, and excise taxes were proposed. In respect to the income and profit tax provisions, the differences between the plans were in details rather than in fundamental principles. On June 14, the Committee on Ways and Means announced its decision to stop issuing daily accounts of its deliberations and on July 26, a bill was reported from the Committee to the House of Representatives. The House passed a bill on Aug. 4, and it was sent to the Senate. The Senate Finance Committee reported its bill on Sept. 2, the Senate passed it on Sept. 5. It was sent to a joint conference committee and the final bill was passed by the House on Sept. 16, the Senate on Sept. 17, and signed by the President on Sept. 20.

Two provisions of the personal in-

* This review has reference only to Federal taxes; for state taxes see "State Finances," page 215.

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come tax caused considerable controversy. One concerned compulsory joint returns for husband and wife. This provision was approved by the House Ways and Means Committee but rejected by the House. The other concerned the size of the personal exemptions. These were left unchanged in the bill as passed by the House but lowered in the Senate bill and in the final bill as approved.

The provisions of the Revenue Act of 1941 in respect to income and profits taxes are not new in principle but contain a number of changes in rates and exemptions. The act is intended to furnish \$3,553,400,000 additional revenue of which \$1,144,600,000 is expected to come from the tax on individual incomes, \$1,382,100,000 from the tax on corporate incomes

and profits, and the remainder from other sources.

PERSONAL INCOME TAX

The personal exemptions are lowered from \$800 to \$750 for single persons, and from \$2,000 to \$1,500 for married persons. The exemption for dependents remains at \$400. The normal tax of 4 per cent on all taxable income is unchanged. The graduated surtax rates are raised and their application extended. Under the 1940 Act the first \$4,000 of "surtax net income" was exempt from the surtax and the rates ranged from 4 per cent to 75 per cent. Under the 1941 Act all "surtax net income" is subject to surtax and the rates range from 6 per cent to 77 per cent. Sample surtax rates under the 1940 and the 1941 laws are shown below.

Surtax Net Income		Surtax Rates	
		1940	1941
Not over \$2,000.....		0	6%
Over \$2,000 but not over \$4,000.....	\$4,000.....	0	9%
Over \$4,000 but not over \$6,000.....	\$6,000.....	4%	13%
Over \$6,000 but not over \$8,000.....	\$8,000.....	6%	17%
Over \$8,000 but not over \$14,000.....	\$14,000.....	15%	32%
Over \$14,000 but not over \$50,000.....	\$50,000.....	40%	55%
Over \$50,000 but not over \$100,000.....	\$100,000.....	56%	64%
Over \$100,000 but not over \$2,000,000.....	\$2,000,000.....	73%	75%
Over \$2,000,000.....		75%	77%

The lowered exemptions and higher rates of recent years have materially increased the amount of the surtax especially in the middle brackets.

Amounts of surtax due on specified surtax net incomes of various amounts under the three latest acts are shown below.

Surtax Net Income	Amount of Surtax		
	1938	1940	1941
\$ 4,000.....	0	0	\$ 300
10,000.....	\$ 300	\$ 360	1,320
20,000.....	1,260	1,880	4,500
50,000.....	7,700	11,780	19,380
100,000.....	30,000	36,760	49,780
1,000,000.....	641,000	647,780	693,780
5,000,000.....	3,591,000	3,597,780	3,723,780

One new provision is made for personal income taxpayers. Persons whose gross income is \$3,000 or less and consists wholly of one or more of the following—salary, wages, com-

pensation for personal services, dividends, interest, rent, annuities, or royalties—may make use of a simplified form. This form enables the taxpayer to ascertain the amount of tax

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due directly from a prepared table without any calculations other than those involved in determining his gross income. The table shows gross income in \$25 intervals from \$750 to \$3,000 and gives the tax due from each income class for single persons and for heads of families. In making the table, allowance has been made for typical deductions from gross income.

CORPORATE INCOME TAX

Two changes were made in the corporate income tax. The 10 per cent defense tax was incorporated in the rate schedules and a surtax was imposed on corporate income. As a result, the normal tax rates on corporate net income are practically the same as before, while the surtax serves to increase the total amount due from corporations. The general rule for the normal tax is 24 per cent of net income. In the case of corporations with net incomes of not more than \$25,000 the normal tax rate is 15 per cent of the first \$5,000 of income, 17 per cent of the income from \$5,000 to \$20,000, and 19 per cent of the income from \$20,000 to \$25,000. An alternative tax which lessens the sharpness of the transition to the 24 per cent rate is provided for corporations with incomes slightly more than \$25,000.

The surtax on corporate incomes was imposed in order to permit the taxation of portions of corporate income which come from certain government bonds, interest on which is exempt from normal taxes but not from surtaxes. The surtax rates are 6 per cent on corporation surtax net income not in excess of \$25,000 and 7 per cent on income above \$25,000.

EXCESS PROFITS TAXES

The excess profits tax constitutes an additional tax on the income of certain corporations. The 1940 rates which ranged from 25 per cent to 50 per cent have been raised to range from 35 per cent to 60 per cent. The new rates are as follows:

Adjusted Excess Profits Net Income	Tax Rates
Not over \$20,000.....	35%
Over \$20,000 but not over \$50,000...	40%
Over \$50,000 but not over \$100,000...	45%
Over \$100,000 but not over \$250,000...	50%
Over \$250,000 but not over \$500,000...	55%
Over \$500,000.....	60%

The two alternative methods of determining excess profits are retained in the law. The Treasury proposed the elimination of the average earnings method but this proposal was rejected by the House Ways and Means Committee. If a corporation chooses the average earnings method of determining excess profits, its excess profits net income is ascertained, after certain adjustments and a flat exemption of \$5,000, as the income in excess of 95 per cent of the average income for the period 1936-1939. A slight change was made in the invested capital method. Under the 1940 law an excess profits credit of 8 per cent of the taxpayers' invested capital was allowed. The 1941 law allows the 8 per cent in the case of corporations with invested capital of not over \$5,000,000 and reduces the credits to 7 per cent of invested capital in excess of \$5,000,000.

The fact that corporations may choose the method by which they determine their excess profits tax is distinctly advantageous for them. The companies which had large earnings during the period 1936-1939 will elect the average earnings method and be subject to excess profits taxes only on the excess above earnings already large. Companies which had small earnings or losses during the 1936-1939 period will elect the invested capital method which will permit them material increases over their former earnings before being subject to the excess profits tax. In order to encourage the investment of new capital the credit for the investment of new capital is increased from 100 per cent to 125 per cent of the value of the new capital.

Some increases in excess profits tax payments will be required by reason of the fact that the 1941 law repeals the sections of the 1940 law which allowed the deduction of income taxes

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in computing excess profits net income. At the same time, however, deduction of the excess profits tax is allowed in determining corporate normal tax and surtax. Each of these provisions is a reversal of previous policy. The 1941 act also repeals the exemption from excess profits taxes which the 1940 act granted to corporations engaged in mining certain strategic metals.

The Declared Value Excess-Profits Tax, as the former excess profits tax was renamed when the new tax was passed in 1940, is still in force. The Revenue Act of 1941 incorporated the defense tax into the rate schedule. The new rates are 6.6 per cent of that portion of net income that is in excess of 10 per cent and not in excess of 15 per cent of adjusted declared value, and 13.2 per cent of that portion of net income that is in excess of 15 per cent of adjusted declared value.

REVENUE FROM INCOME AND PROFITS TAXES

The total collections of income and profits taxes by the Federal Government in the fiscal year ended June 30, 1941 were \$3,462,028,369. This is the second largest amount ever collected from these taxes. The largest amount ever collected was in the fiscal year ended June 30, 1920 when collections amounted to \$3,956,936,004.

In only one other year—1921—have collections exceeded \$3,000,000,000.

The following table shows the collections of corporate and individual income taxes and of excess profits taxes for the fiscal years 1925, 1930, 1935, 1940, and 1941 and the per cent which these taxes were of the total of federally collected taxes. Collections on corporate incomes exceeded collections on individual incomes in each of the years shown. Separate figures on corporate and individual income tax collections are available for the past 17 years and in only two of these years—1934 and 1937—did individual income tax collections exceed corporate income tax collections. The relatively small collections on excess profits taxes are due, in part, to the fact that the "war" excess profits tax was not passed until 1940 and the figures for the 1941 fiscal year cover only six months of collections under this law. Unless there is a substantial change in the nature of our income and excess profits taxes, the yield of the income taxes may be expected to be materially larger than that of the excess profits taxes. The proposed budget for the fiscal year, 1942, submitted early in 1941 estimated that excess profits tax collections would be about one third as large as individual income tax collections and about one fourth of corporate income tax collections.

INCOME AND PROFITS TAX COLLECTIONS

Fiscal Year	(In Thousands of Dollars)					Per Cent Which Income and Profits Taxes Were of Total Federal Tax Collections*
	Corporate Income Tax	Personal Income Tax	Total Income Tax	Excess Profits Tax	Total Income and Profits Tax	
1925.....	916,233	845,426	1,761,659	—	1,761,659	56.3
1930.....	1,263,414	1,146,845	2,410,259	—	2,410,259	66.5
1935.....	572,118	527,112	1,099,230	6,561	1,105,791	30.4
1940.....	1,120,582	982,017	2,102,599	18,474	2,121,073	37.3
1941.....	1,851,988	1,417,655	3,269,643	192,385	3,462,028	44.6

* Total Federal tax collections include internal revenue and customs.

CURRENT PROPOSALS

Even before the United States entered the war it was generally recog-

nized that legislation providing further additional revenue would be required in 1942. In July 1941 Presi-

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dent Roosevelt stated that a tax bill a year would be required during the emergency. During the fall of 1941 a number of suggestions for 1942 changes in the income and profits tax provisions were made. Some of these suggestions were not new but would reopen controversies which were settled—temporarily at least—in the Revenue Act of 1941. Other suggestions embodied new principles.

At least two controversial aspects of the 1941 law will doubtless be re-examined in 1942. The provision for compulsory joint returns by married persons would provide additional revenue from the personal income tax. This provision still has many supporters in Congress although it was finally deleted from the Revenue Act of 1941. One of the most controversial parts of the excess profits tax concerns the method of determining excess profits. The proposal, rejected in 1941, for eliminating the average earnings method can not be regarded as a dead issue.

At least three proposals for new applications of income and profits taxes were outstanding at the end of 1941. In September, Secretary of the Treasury Morgenthau proposed for the period of the emergency a tax of

100 per cent on all profits over 6 per cent of invested capital. In November it was suggested, apparently with Treasury approval, that a flat tax on incomes collected at the source would both furnish additional revenue and help to "mop up" excess purchasing power. This proposal brought forth numerous protests. Administration spokesmen modified it later in the month by advocating that at least part of the possible collections at the source take the form of compulsory saving rather than outright taxation. It would be a marked departure from precedent for this country if income taxes were collected at the source and a part of the proceeds invested in government securities in behalf of the taxpayer.

Most of the discussion of 1942 taxes which took place after the passage of the Revenue Act of 1941 came before the United States entered the war. It was frequently noted that 1942 would be an election year and that, therefore, Congress could not be expected to support drastic new taxes. As long as the country remains at war, however, Congressional support of heavy income and profits taxes is to be expected.

LAND AND PROPERTY TAXES

BY FINN BJÖRN JENSEN

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GENERAL

State tax legislation in 1941 was milder than for any year since 1932, and changes in property taxes constituted probably a smaller proportion of that legislation than before. Several states, including New York, California, Michigan, Rhode Island, Ohio, Pennsylvania, Illinois, and Florida, relinquished the general property tax in favor of their localities.

ADMINISTRATION

Colorado integrated collection of all state taxes in its Department of Rev-

enue, leaving administration of the laws to a Department of Taxation. Michigan likewise centered in its Department of Revenue functions formerly carried out by five agencies, including administration of the intangibles tax and the tax on utilities. An administrative reorganization in Idaho included a transfer of the duties of secretary of the State Board of Equalization from the tax commissioner to the state auditor. A complete reorganization in Indiana (S.B. 15) established a State Board of Finance made up of governor, state au-

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ditor, and state treasurer, and replaced the State Board of Tax Commissioners by the Indiana Tax Board.

LEVIES

A new intangibles tax in Florida set up four classes in place of three with a rate of 1 mill for money, bank deposits, etc.; 1 mill for stocks, bonds, mortgages, deeds of trust, etc. dated prior to Jan. 1, 1942; and 3 mills for those dated later and secured otherwise than by a lien on Florida real estate; and 1 mill for all others. Georgia enacted a rate of 50¢ on each \$1,000 of stocks in foreign corporations (H.B. 379). Kansas substituted an occupational tax for the property tax on grain (H.B. 73). Maryland cut the real and personal rate from 22¢ to 14¢ on each \$1. Massachusetts levied a schedule of rates from 1% to 6% on forest products, and included forest land under the property tax (Ch. 652). A revised railroad tax law in New Jersey provided a flat rate of 3% on all railroad property (Ch. 291), while Vermont reduced her rate from 1½% to 1% (H.B. 59).

In Pennsylvania an 8-mill rate on banks and savings institutions was imposed until Dec. 31, 1942, an 8-mill rate on corporation loans continued for 1942 and 1943, property held by joint trustees brought under the act, and exemption granted personal property held by a receiver, trustee, or fiduciary in a commercial department (Acts 145, 146). South Carolina enacted a 3-mill property tax for its counties (H.B. 137). Vermont decreased the tax on domestic trust company and savings bank deposits from 5/10 of 1% to 4/10 of 1% and decreased a semi-annual tax on deposits in national banks from 5/20 of 1% to 4/20 of 1% (H.B. 277).

PROPERTY ASSESSMENT

Georgia inaugurated a program of land tax surveys in counties of 85,000 to 100,000 population, and limited the jurisdiction of the State Board of Tax Appeals to assessment issues, giving the State Revenue Commissioner authority over all other cases (H.B. 593). Illinois required the publication

of assessment rolls in newspapers, and in pamphlet form in the larger cities (S.B. 117). Iowa provided for 60% assessment valuation (S.F. 165), except that agricultural produce is to be valued at 30% for 1940 to 1942 (H.F. 34). In Maryland an amendment provided for assessment by the State Tax Commission of the operating property, other than land, of railroads, public utilities, and contract carriers. In Michigan the assessment date was shifted from the second Monday of April to April 1, and the term "real property" redefined (P.A. 234). In Minnesota assessment value on domestic animals, poultry, and agricultural tools was raised from 10% to 20%, while in North Dakota property is to be assessed at full value.

Ohio amended the procedure for appeals from assessment, and amplified the provision for assessment certificates (S.B. 77). The assessment day in Oregon was moved forward from March 1 to Jan. 1, with tax levies determined in June and July (H.B. 107). In South Dakota property is to be listed before April 20 and assessed before June 30, and the value determined as of the following April 20, except that new buildings are not to be assessed until one year from the April 20 following the date construction began. In Washington forest lands were made assessable as real property at 50% value (S.B. 26S). lumber and sawlogs are to be assessed and taxed in the county and taxing district where situated at noon, Jan. 1, or at the place of destination if in interstate commerce (H.B. 250), it is provided that there may be more than one re-assessment by judicial decree (H.B. 245), but no petition for cancellation or reduction of assessment or correction of tax rolls or refunds unless filed within three years after the year in which the tax was payable (H.B. 249).

TAX LIMITATIONS

There were, as always, a great number of changes in the limitations of funds for specific purposes, but no new over-all property tax limits were passed. Kansas revised her tax limit

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laws, allowing levies to be increased by elections, granting the commission authority to allow increases where necessary to meet expenses, and permitting additional levies for social welfare, and in certain first class cities for general and special improvements (H.B. 485). All limits were removed on first class cities in Indiana (ch. 213), Utah permitted its Salt Lake City to levy additional taxes on real or personal property up to 2.5 mills for national defense purposes. Governing bodies in West Virginia were permitted, with the approval of the tax commission, to increase rates for current expenses by unutilized amounts allowed for debt service. Washington re-enacted an over-all 40-mill levy limitation (H.B. 557).

EXEMPTIONS

A Georgia proposal (S.R. 19) would amend the constitution to exempt rural electric corporations from all *ad valorem* taxes for a period of 20 years from Jan. 1, 1942. Iowa provided for homestead credit for dwellings occupied by the owner with intention to stay for at least six months (H.F. 531), and permitted designation of homesteads by members of the owner's family when the owner is in the army or navy (S.F. 248). Maryland exempted household effects held for personal use (Ch. 770); Massachusetts, property of foreign insurance companies by virtue of reciprocity provisions (Ch. 467), household furniture and effects up to \$1,000 when stored in public warehouses (Ch. 482), and property held in other cities for public airport purposes (Ch. 440); Michigan, homesteads of individuals serving in the army or navy (P.S. 125); Missouri, interstate bus and truck lines (S.B. 190); North Carolina, farm products held by the producer for the year following production (S.B. 106); New Jersey, all buildings exclusively used and owned by volunteer first-aid squads incorporated as non-profit associations (Ch. 243); Pennsylvania, salaries and emoluments in second and third class counties and counties where commissioners have resolved not to tax occupa-

tions (Act 99); South Carolina, manufacturing plants or increases of plants in three counties for five years; South Dakota, property of telephone companies not actually used in operation of the lines (H.B. 120); Washington, contracts for purchase of public lands subject to taxation as personal property (S.B. 56).

TAX COLLECTION

Illinois enacted, as due dates for real estate taxes in counties of 500,000 or over, May 1 and Sept. 1 (S.B. 365), and provided for refunds in case of erroneous assessment (H.B. 177). In Iowa utility reports are due on May 1 instead of Jan. 15 (S.F. 240). In Pennsylvania, taxes on unseated lands are to be collected and retained in the same manner as on unseated lands (Act 191). A discount of 2½% in second-class cities is allowed for payment before Jan. 31, and 2% if before Feb. 28, installment payments allowed on a quarterly basis. South Carolina extended the time for paying taxes for 1940 to May 1, 1941 without additional penalty (H.B. 154). Tennessee provided for quarterly payments of current state and county taxes. In Washington, forest land taxes may be deferred at 3% interest (S.B. 268).

DELINQUENCY

Collection practices relating to delinquent taxes were liberalized in Arizona, Arkansas, Illinois, Kansas, Nebraska, North Dakota, Pennsylvania, South Dakota, and Wisconsin, and installment payments of delinquent taxes simultaneously with current taxes provided for in Illinois, Minnesota, North Dakota, New Jersey, and South Dakota. Delinquent taxes or special assessments in Michigan cannot be paid under protest (P.A. 234), and any party appealing from an adverse decree must file a bond. Also the fee for delinquency has been increased from \$.50 to \$1. In New Jersey, delinquent railroad taxes may be paid by installments over a period of years without interest charges, the maximum number of years to be adjusted to ability to pay (Ch. 291).

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TAX SALE PROCEDURE

Kansas enacted a new method for selling tax delinquent land requiring listing of property between June 1 and June 10, prior publication by three weeks of intent to sell, bidding off property in the name of the county, recording of all sales, a lien on property sold of all taxes accumulating after the sale, setting up the procedure for redeeming property and refunds

after invalid sales, and providing for application of rentals against taxes owing on the property (H.B. 483). In Massachusetts, full or partial payment of tax bills issued for separate parcels of land is required prior to tax taking or tax sale of such parcels (Ch. 573). West Virginia enacted new provisions for collection and sale of land for delinquency (H.B. 269).

CORPORATION AND BANK TAXES

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EXEMPTIONS FOR RFC SUBSIDIARIES

Exemption from all except non-discriminatory real property taxes was extended to all the subsidiary corporations of the Reconstruction Finance Corporation, including Defense Plant Corporation, Defense Supplies Corporation, Metals Reserve Company, Rubber Reserve Company, RFC Mortgage Company, Federal National Mortgage Association, and Disaster Loan Corporation (Public Law, Federal, No. 108).

CORPORATE INCOME TAXES

Connecticut exempted companies not taxed under the Federal corporation net income tax, and for allocation purposes required "net gains" rather than "gains" from sales or rentals of tangible capital assets, and "net book" value instead of "fair cash" value of tangible property (Ch. 111). An Idaho amendment (S.B. 49) permitted deduction of Federal taxes on income, excess or war profits, or capital stock, while Iowa exempted from gross income profits from business in another state when taxed there or if the state reciprocates with a similar law (S.F. 411). Massachusetts passed a 3% surtax (Ch. 729), and South Carolina increased its minimum income tax from 2% to 3% (H.B. 137).

CAPITAL STOCK TAX

New rates for bonus taxes were passed in Maryland ranging from \$20

for the first \$100,000 or less to \$390 for \$5,000,000, plus \$20 for each additional \$1,000,000. Building and home-stead associations, credit unions and cooperatives were exempted (Ch. 912).

INTANGIBLES INCOME TAX

A Massachusetts amendment (Ch. 331) extended taxation for personal income purposes of dividends, except stock dividends in new stock, for 1942 and 1943; provided that credit for dividends paid to state residents by foreign corporations shall not be allowed for 1942 and 1943; and extended the additional method of computing the income tax for corporations dealing in securities for 1943 and 1944.

FRANCHISE TAXES

Georgia provided the same rate for both domestic and domesticated foreign corporations (H.B. 592). Kansas imposed a fee for filing amendments to articles of incorporation and eliminated exemption of stocks and bonds of domestic corporations owned by non-residents or foreign corporations (S.B. 171). In New York, counties increased the franchise tax on corporations (Ch. 135); new corporations or increase of capital stock not coming under the tax must pay a minimum tax (Ch. 520); cash on hand or on deposit from gross assets are excluded in allocating capital stock to New York for purposes of the license

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fee on foreign corporations, the franchise tax on holding companies, and the franchise tax on transportation and transmission companies (Ch. 75); and corporations wholly engaged in holding title to obligations of purchaser received upon sale of real estate are exempted from the franchise tax on real estate corporations (Ch. 528). Ohio imposed an annual license fee of \$1.25 per \$1,000 of capital used in the state, with a minimum of \$10, a maximum of \$15,000, and a delinquency penalty of 10%. Oklahoma increased its rate from \$1 to \$1.25 per \$1,000, and its maximum from \$10,000 to \$15,000, and changed the basis from "value of capital stock" to "capital" (H.B. 116). Texas changed the rate to \$1 per \$1,000 of capital stock, and raised the maximum to \$20.

BANK TAXES

Massachusetts changed the tax determination date for banks to March 15, the due date to June 1, and the filing date to March 1 (Ch. 509). Minnesota substituted for all taxes on capital, surplus, property, assets and shares, except real property, an 8% tax on net income of national and state banks (H.B. 494), and North Dakota did likewise with a 4% net income tax and a minimum of \$50 (H.B. 74). In New Jersey banks need no longer file assessment statements in duplicate (Ch. 318). In South Dakota the income tax on financial institutions was amended (H.B. 101) to provide that the tax in Section 4 on "other banks" shall start Jan. 1, 1939, and to permit building and loan associations to deduct from gross income dividends on withdrawable stock.

GROSS RECEIPTS TAXES

Arkansas imposed a 2% rate on utilities (H.B. 426); Ohio extended until April 30, 1943 a 65/100 of 1% rate on utilities (H.B. 172); New Mexico passed a rate of $\frac{1}{2}$ of 1% on utilities with a minimum of \$25 under \$1,200, and \$50 between \$1,200 and \$2,000 (H.B. 29); Massachusetts provided for a temporary additional tax on utilities applicable to assessment of taxes for 1941, 1942, and

1943; New York City taxed business at $\frac{1}{20}$ of 1% and financial institutions at $\frac{1}{10}$ of 1% (Ch. 199), and extended the utility tax for one year (L.L. 49, Bill 508); New York imposed a .2% emergency tax on utilities (Ch. 137); Texas increased utility taxes and added a 2.2% gross receipts tax on services in connection with cementing casing seats of oil or gas wells, or surveying or testing sands or earth formations; and Washington imposed a 2% rate on sale of electric energy in the state (H.B. 302). Florida repealed a $\frac{1}{2}$ of 1% rate on retailers (S.B. 86); Indiana reduced the rate on retailers from 1% to $\frac{1}{2}$ of 1%; and Tennessee relieved manufacturers and distributors of gas from a 3% rate, thus resubjecting them to a $1\frac{1}{2}$ % municipal tax (S.B. 388). Connecticut requires utilities to specify in their returns the cost of appliances sold (S.B. 2626).

CHAIN STORE TAXES

Both Colorado (H.B. 930) and Texas exempted gasoline filling and service stations dealing primarily in sale or distribution of petroleum products from the chain store tax. Florida passed a new law with rates from \$10 for independent stores to \$400 for each store in the state belonging to a chain of more than 50 stores, plus a tax of \$10 per each \$1,000 of merchandise inventory, with the first \$1,000 exempt (S.B. 86). Iowa exempted stores in unincorporated villages within eight miles of each other (S.F. 236). A Minnesota graduated tax on chain stores and mail order houses was upheld by its Supreme Court (*C. Thos. Stores Sales System Inc. v. Spaeth, et al.*). Tennessee redefined "chain store" (S.B. 388). Utah imposed license fees ranging from \$50 for each unit of a chain of 10 to 100 stores to \$500 for each unit in a chain of more than 500 stores. For stores opened after May 13, 1941 the rate is ten times that for each bracket listed above (S.B. 44).

INSURANCE TAXES

In California a proposed amendment to the constitution would tax

VII. PUBLIC FINANCE AND TAXATION

insurance companies at the rate of 2.55% for 1943, 2.50% for 1944, 2.45% for 1945, 2.40% for 1946 and 1947, and 2.35% thereafter (Ch. 84, ACA, no. 53). Illinois permitted deductions for amounts paid for the benefit of fire departments in incorporated towns (S.B. 151). Maryland imposed a tax of 1% for annuities and 2% for other premiums, exempted insurance companies from income taxes and license fees (H.B. 469). Michigan provided that the "in lieu of" provisions with respect to specific taxes required of foreign companies shall not apply to tangible personal property owned or held for investment purposes in the state (P.A. 299). Missouri passed a 2% premiums tax on mutual companies other than life and fire (S.B. 136); Nevada a 2% tax on total premium income and a scale of license fees; New Hampshire, a flat fee of \$150 plus \$2 for each agent's license (H.B. 14); Oklahoma, a tax of 5/16 of 1% on total gross fire insurance premiums, and an increase from 2% to 4% on premiums collected within the state by foreign companies (H.B. 32); and Texas increased its rates.

FEDERAL CORPORATE INCOME TAXES

The separate 10% defense tax has been integrated with the normal tax for all classes of corporations (Section 103, 1941 Act). The new rates are less than 1% greater than the previous total, including the defense tax for corporations of net income not more than \$25,000, and the same for all others. The normal tax net income basis equals net income minus interest on United States obligations, and minus "credit for dividends received" (85% of dividends received from taxable domestic corporations or 85% of "adjusted net income," i.e., net income minus interest on United States obligations, whichever is less). On this basis the rates are as follows: up to \$5,000, 15%; \$5,000 to \$20,000, \$150 plus 17% of the excess; \$20,000 to \$25,000, \$4,400 plus 19% of the excess; \$25,000, \$4,250; \$25,000 to \$38,461.54, \$4,250 plus 37% of the excess; over \$38,461.54, 24%. Resident foreign

corporations are taxed at 24%, mutual investment companies at 24% on a special basis outlined in Section 363, and non-resident foreign corporations 27½% on the fixed or determinable annual or periodical income from United States sources.

The new corporation surtax (Section 104, 1941 Act), with its basis defined as net income minus credit for dividends received (see above), but including interest on partially tax exempt securities, is applied also to mutual investment companies, banks and trust companies, resident foreign corporations, and the China Trade Act Corporation. The rate is 6% on the first \$25,000 and 7% on the remainder. In determining the net income basis for both normal and surtax purposes, excess profits taxes are now deductible (Sec. 202), and deductions for charitable contributions are limited to 5% (Sec. 202). The new rates for the surtax on personal holding companies (71½% and 82½%) and for corporations improperly accumulating surplus (27½% and 38½%) represent the absorption of the defense tax, and are in addition to the new surtax.

CAPITAL STOCK AND DECLARED VALUE EXCESS PROFITS TAX

In Sections 301, 302 the defense tax of 10% is eliminated, and the new rate of \$1.25 per \$1,000 of declared value of capital stock replaces the rate of \$1.10, including the defense tax. The excess profits tax is excluded from the basic adjusted declared value for capital stock tax purposes (Sec. 202).

The new rates for the declared value excess profits tax have absorbed the defense tax, and are now 6.6% of net income in excess of 10% and not over 15%, and 13.2% of net income in excess of 15%. The basis no longer allows deductions for the excess profits tax or the declared value excess profits tax (Sec. 202).

EXCESS PROFITS TAX

The Excess Profits Tax Amendments of 1941, provided retroactive relief to corporations by restoring to base period income abnormal deduc-

ESTATE AND INHERITANCE TAXES

tions of any kind, allowing a larger average base period net income where earnings had increased in the last half of the base period, and allowing for abnormal conditions during the base period. Also credit under the income or invested capital method was permitted without a binding election, and corporations were permitted to carry forward increased excess profits credit to two succeeding taxable years.

In the changes in the 1941 Act, rates were increased by 10% in each bracket (Sec. 201 [a]). No deductions are allowed for the normal tax, as previously, or for the surtax. In computing net income for the base period (1936-1939), deduction of Federal in-

come taxes is no longer required (Sec. 202 c). To determine the amount of unused excess profits credit that may be carried over, both the credit and the net income for 1940 must be recomputed (Sec. 202 e). A reduction in the invested capital credit brings the allowance to 8% up to \$5,000,000, and 7% on the remainder (Sec. 201 b). The amount that may be included for new capital paid in, however, is increased by 25% subject to certain limitations designed to prevent mere adjustment in existing capital (Sec. 203). The partial exemption granted to mining corporations working for national defense was repealed (Sec. 204).

ESTATE AND INHERITANCE TAXES

By MORTIMER M. KASSELL

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GENERAL

Recent decisions of the Supreme Court of the United States, such as *Curry v. McCanless* (307 U. S. 357) and *Graves v. Elliott* (307 U. S. 383), approving multi-state taxation of the intangible personal property of decedents and indicating a reorientation of constitutional doctrine toward a more realistic application of the tax laws, were responsible for many of the developments in the field of estate and inheritance taxation during the calendar year, 1941. Such developments also reflected renewed efforts by the states to solve legal and administrative problems of long standing.

STATE COURT DECISIONS

Among the state court cases, involving important constitutional questions, were *Estate of Harkness v. State Tax Commission*, decided by the Supreme Court of Utah on Sept. 19, 1941, and *Matter of Thayer*, 286 N. Y. (Mem.) 34. The *Harkness* case held that recent decisions of the Supreme Court, as exemplified by the *Curry* case, did not overrule the holding in

First Nat. Bank v. Maine (284 U. S. 312), to the effect that a state was without jurisdiction to impose a death tax with respect to the transfer of stock in a domestic corporation owned by a non-resident decedent. In the *Thayer* case, the Court of Appeals held that New York was without power to impose a death tax with respect to the transfer effected by the exercise, in the will of a resident decedent, of a general power of appointment created by a non-resident decedent. In the latter case, the Supreme Court granted a writ of certiorari on Oct. 27, 1941 under the title *Graves v. Schmidlapp*.

STATE LEGISLATION

With the enormous growth of the activities and obligations of the Federal Government and of the several states, and the attendant increase in the size and complexity of the national and local tax structures, the necessity for cooperation among the myriad of tax units has become apparent.

During 1941, the desire of states to cooperate in the taxation of death

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transfers was reflected in the legislation enacted in New Hampshire (S.B. 63), New York (c. 280) and Pennsylvania (Act No. 300) providing for agreements with other states comprising domiciliary death disputes. Delaware (S.B. 32) went further and adopted a model law providing for the compromise and arbitration of domiciliary death disputes.

In an effort to minimize the possibility of double taxation of death transfers of intangibles, Kansas (c. 369), Minnesota (c. 470), Missouri (S.B. 85), North Carolina (c. 50), Ohio (S.B. 117), and Washington (c. 124) made provision for the exemption of intangible personal property of non-resident decedents from death taxation.

Of the numerous other changes made in the laws of the states, with respect to inheritance and estate taxes, only the more significant can be noted.

Arkansas (Act No. 136) repealed its inheritance tax law and enacted an estate tax law. California (c. 177) exempted transfers to a charitable beneficiary by the exercise or non-exercise of a power of appointment. Colorado (c. 146) provided for the imposition of an estate tax to take up the 80% Federal credit, and for reciprocal enforcement of death taxes in the case of non-resident decedents. Connecticut (c. 200) exempted the first \$5,000 of joint checking or savings accounts in building or savings and loan associations. Iowa (S.B. 553) exempted transfers to organizations composed wholly of veterans of any war of the United States. Kansas (c. 369) increased the exemption of a husband to \$75,000, provided that a transfer made within one year of death shall be presumed to have been made in contemplation of death, and provided for the allowance of a deduction for previously taxed property. Maryland (c. 790) provided that any transfer made within two years of death shall be deemed to have been made in contemplation of death. Michigan (Act No. 302) exempted proceeds of insurance payable to trustees for distribu-

tion to beneficiaries named in the trust instrument. New York (c. 118) provided for the deduction from the gross estate of transfers to officers of religious denominations. Oklahoma (S.B. 46) provided for the allowance of a deduction for previously taxed property and discontinued the deduction theretofore allowed for death duties paid other states or foreign countries on intangibles included in the gross estate. Utah (S.B. 108) provided for an election by executors to value the decedent's estate as of the date of death or nine months thereafter. Vermont (H.B. 39) exempted transfers to cities, towns, and other municipal corporations within the state for charitable, educational, and religious purposes.

FEDERAL ESTATE TAX

The Commissioner of Internal Revenue made far-reaching changes in the method of taxing proceeds of insurance policies (T.D. 5032; I.R.B., 1941-3-10570). Section 401 of the Revenue Act of 1941 amended section 935(b) of the Internal Revenue Code so as to increase estate tax rates in the estates of decedents dying after Sept. 20, 1941. Such increased rates absorbed the former 10% defense tax.

The Supreme Court of the United States held that an estate which elects to value the decedent's gross estate as of one year after decedent's death, for purposes of the Federal estate tax, is not required to include income received by it during the interim period (*Maas v. Higgins*, 312 U. S. 443). The Supreme Court also held that the proceeds of a single premium life insurance policy purchased by a decedent in conjunction with a single premium annuity are not proceeds of insurance, for purposes of the Federal estate tax, and are required to be included in the value of decedent's gross estate as a transfer intended to take effect in possession or enjoyment at or after decedent's death. (*Helvering v. Le Gierse*, 312 U. S. 531; *Keller v. Commissioner of Internal Revenue*, 312 U. S. 543).

AUTOMOBILE TAXES

AUTOMOBILE TAXES

BY BEULAH BAILEY THULL

RESEARCH ASSISTANT, NEW YORK STATE DEPARTMENT OF TAXATION
AND FINANCE

CAR REGISTRATION

There is no doubt but that 1940 will be the all-time high for many a year in car registration, as 1941 and subsequent years will reflect the curtailment of cars due to the priority of national defense needs. In 1939 the grand total, including 394,783 machines publicly owned, was 31,009,870. In 1940, the grand total, including 427,496 machines publicly owned, was 32,452,861, an increase of 1,442,991 or 4.7 per cent. The greatest percentage of increase was in Florida, 9.8 per cent.

REGISTRATION AND MISCELLANEOUS FEES

Revenue Return.—The revenue from the registration fees and certain miscellaneous fees, such as operators' and chauffeurs' permits, was \$439,178,000 in 1940, an increase of \$26,684,000 over 1939. The increased revenue was due primarily to increased registrations.

Registration fee schedules for 1942 were changed in Florida, Indiana, Maine, North Dakota, Oklahoma, Texas, and Washington. Florida increased the flat fees on passenger automobiles from the range of \$5 to \$20 to that of \$5 to \$25. Florida also imposes a maintenance tax of \$50 on trucks heavier than 18,000 lbs. and on all tractor and semi-trailer combinations over 34,000 lbs. gross weight, except common and contract carriers.

Indiana.—The "tire" weight tax has been repealed in Indiana. To make up for this loss in revenue, the fee on trucks and delivery cars was increased, and the basis of tax for trailers and semi-trailers changed from carrying capacity to body length.

Maine reduced the fees for trucks of 2 to 2½ tons from \$35 to \$30 and for trucks weighing from 2½ to 3 tons from \$55 to \$35.

North Dakota has a new schedule of license fees for trucks and trailers based upon the gross weight in pounds. Previously the fees were based upon the advertised load capacity. A 1941 law gives special preference to motor vehicles used for the transportation of farm products or used within a municipality. The fee ranges from \$13.50 for 4,000 lbs. to \$40 for 40,000 lbs. The fees for all other trucks and trailers range from \$20 for 4,000 lbs. or less to \$250 for 40,000 lbs. These schedules apply the first year of registration but are subsequently decreased by 10 per cent until a certain point is reached. House trailers have a flat rate of \$5. The maximum fee for motor carriers imposed by the Public Service Commission has been increased from \$75 to \$150.

Oklahoma levies an excise tax of 2 per cent of value on all cars. All license fees have been increased. The increased fee for passenger cars is \$16.50 for new automobiles and 90% of this for the subsequent five years. There are three classes of trucks, etc. with fees ranging from \$20 to \$667.50. Non-resident owners of trucks are permitted two trips monthly before having to take out an Oklahoma license.

Texas levies a retail sales tax of 1 per cent on all motor vehicles. Fees for commercial motor vehicles and trucks have been decreased to a range of 50¢ per cwt. to \$1.20 per cwt. The range was formerly from 40¢ per cwt. to \$5 per cwt. The range on motor buses is from \$1.25 per cwt. to \$6 per cwt. This was an increase over the former schedule which ranged from \$1.10 per cwt. to \$6 per cwt. All vehicles using the Diesel motor pay a 10 per cent additional registration fee.

Washington.—The 1941 laws of Washington change the registration fees for motor trucks, trailers and

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semi-trailers by graduating the fees according to each 2,000 lbs. of maximum gross weight. Motor trucks propelled by steam, electricity, natural gas, Diesel oil, butane or propane pay 25 per cent more than the basic schedule and farm trucks pay $\frac{1}{2}$ of the schedule.

DEFENSE PROGRAM AND LEGISLATION

The impact of the defense program was clearly manifest in 1941 legislation. Members of the armed forces were either entirely relieved from registration fees, previously paid fees were refunded, or reciprocal registration privileges were granted to non-residents in Arkansas, Connecticut, Maryland, Minnesota, New York, North Dakota, and Wyoming.

RECIPROCAL STATE PRIVILEGES

It is interesting to note that there is growing liberalization of reciprocal privileges. This year Arkansas, Georgia, Maine, Minnesota, New Hampshire, Ohio, Oregon, New York, Texas, Wisconsin, and Wyoming extended still further their reciprocal privileges, and, as already stated, Oklahoma permits non-resident trucks two trips a month in Oklahoma territory.

STATE GASOLINE TAX REVENUE AND RATES

The net revenue from the state gasoline taxes was \$870,692,000 for 1940 as against \$821,656,000 for 1939. The gross amount of gasoline used for transporting motor vehicles on the highways was 24,167,190,000 gallons, an increase of 1,283,462,000 gallons or 6.2 per cent over 1939.

Two states, Maine and Oklahoma, increased the gasoline tax rate, Maine from 4¢ to 4½¢ per gallon and Oklahoma from 4¢ to 5½¢ per gallon. However, the increase in Maine has been suspended by referendum petition until November, 1942 when it will be voted on by the people. Temporary additional or "emergency" taxes are continued in Florida, Massachusetts, Minnesota, Nebraska, New York, North Dakota, Ohio, Pennsyl-

vania, and West Virginia. (See also "State Finances" page 219.)

FEDERAL GASOLINE AND OTHER TAXES

In addition to the state taxes on automobiles and gasoline, there are the Federal taxes on gasoline, oil, automobile parts and accessories, and rubber tires. For the fiscal year ended June 30, 1940 these Federal taxes amounted to \$376,822,009, an increase of \$48,000,000 over the preceding year. For 1942 there will be still larger Federal revenue from the automotive industry as the tax rates are substantially increased. There is a use tax of \$5 per vehicle on all motor vehicles. This becomes effective in February, 1942 but at present (December, 1941) there is much discussion as to whether or not Congress will repeal this tax due to the cost of collection. It is thought that the motor vehicle department of the various states could collect the tax with very little additional expenditure.

The excise tax rates on manufacturers is increased from 3½ per cent to 7 per cent for automobile chassis and house trailers; 2½ per cent to 5 per cent for trucks and tractors; buses, 3½ per cent to 5 per cent; on truck trailers and semi-trailers the rate is 5 per cent, formerly they were not taxed; motor vehicle parts and accessories 2½ per cent to 5 per cent; tires 2½¢ per lb. to 5¢ per lb.; tubes 4½¢ per lb. to 9¢ per lb. The Federal tax on gasoline remains the same.

STATE LEGISLATION ON MOTOR FUELS

Twelve states enacted legislation extending motor fuel taxes to Diesel and similar substances either through broadening the definition of "motor fuels" or by enacting a "use fuel tax." These states are Arizona, Arkansas, Kansas, Maine, Minnesota, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Utah and Washington. In most instances the use tax on Diesel is at the same rate as the gasoline tax but the Texas tax on Diesel fuel is 8¢ per gallon, while the tax on gasoline is 4¢.

COGNATE SOCIETIES AND RESEARCH INSTITUTIONS

THE OUTLOOK

There should be during 1942 a decided decrease in the number of cars registered. There has been during 1941 and probably will be during 1942 a decrease in the consumption of gasoline for individual highway purposes. The result of such decreases will be a decrease in state revenue from auto-

motive sources. The majority of states exempt gasoline used for the defense program. This decrease in revenue will be a hard blow to the states which divert their automotive monies to the general fund, or use a large share of it for retirement and carrying charges on highway debts.

PERIODICAL PUBLICATIONS

American Economic Review

Northwestern Univ., Evanston, Ill.

Business Week and The Annalist

330 West 42nd Street, New York City.

Commercial and Financial Chronicle

25 Spruce Street, New York City.

Journal of Economics

Harvard University Press, Cambridge, Mass.

Journal of Political Economy

5750 Ellis Ave., Chicago.

Nation's Business

Chamber of Commerce of the United States, Washington, D.C.

Tax Digest

15 East 26th Street, New York City.

Tax Magazine

350 Fifth Ave., New York City.

COGNATE SOCIETIES AND RESEARCH INSTITUTIONS

(For further information, the reader may address the following organizations)

AMERICAN TAXPAYERS' LEAGUE, Munsey Bldg., Washington, D.C.

NATIONAL HIGHWAYS ASSN., Bass River, Cape Cod, Mass.

NEW ENGLAND STATE TAX OFFICIALS ASSOCIATION, Room 236, State House, Boston, Mass.

NORTH AMERICAN GASOLINE TAX CON-

ERENCE, 844-46 Consolidated Bldg., Indianapolis, Ind.

RESEARCH INSTITUTE OF AMERICA, INC., THE, 292 Madison Ave., New York City.

TAX POLICY LEAGUE, 907 Broadway, New York City.

TAX REVISION COUNCIL, 850 E. 58th St., Chicago, Ill.

DIVISION VIII

PUBLIC RESOURCES AND UTILITIES

FEDERAL SURVEYS AND MAPS

BY K. T. ADAMS

CHIEF, TOPOGRAPHY SECTION, U. S. COAST AND GEODETIC SURVEY

GENERAL

The United States Government requires many surveys and maps in connection with administration and other activities and functions, and it is not surprising that there are, perhaps, 30 separate agencies which engage in surveying or mapping to some extent. Maps are needed to record the natural resources of the earth's surface, the cultural development thereon, and man's relation thereto, and for military purposes. The recent national emergency has accelerated Federal mapping and surveying, and numerous maps are being compiled which are for military purposes and can not be described.

The primary function of certain agencies is mapping and surveying, while certain others engage in no surveying but do occasionally compile and publish maps. Among the former, the Coast and Geodetic Survey establishes the basic geodetic control throughout the country and surveys and publishes charts of the coastal areas of the United States and possessions; the Geological Survey surveys and publishes geological and topographic maps (quadrangles) of the country; the General Land Office surveys the public lands; and the Hydrographic Office surveys and publishes charts of foreign waters.

The Federal Board of Surveys and Maps, composed of representatives of the various agencies, coordinates their activities, and serves in an advisory capacity in other respects. Monthly

meetings are regularly held. A Map Information Office has been established in the Geological Survey, which serves as a central clearing house to furnish, to the various Government agencies and the public, information relative to surveys, and existing maps and air photographs.

The progress of the more important surveys and mapping is reported under the various department and agency headings. Compiled special purpose maps are published infrequently by several other agencies. The Office of Geographer of the Department of State publishes maps in connection with treaties and other duties of that Department. The Division of Maps of the Library of Congress publishes special maps, often of historical significance. The International Boundary Commissions have published maps along the international boundaries based on accurate surveys of those areas.

MAP OF THE AMERICAS

The Map of the Americas, scale 1:5,000,000, is an important new series of three maps embracing the whole of South and Central America, the Caribbean area, and the southern part of the United States. The two southern maps will cover South America, the northern covering the remainder. The three maps are part of one projection and will fit one another accurately at the junctions. The northern map has been issued, and all are expected to be issued in early 1942. The maps

FEDERAL SURVEYS AND MAPS

are being prepared by the American Geographical Society in cooperation with the Department of State and the Coordinator of Inter-American Affairs.

DEPARTMENT OF WAR

The Corps of Engineers published, during 1941, new standard topographic quadrangle maps, scale 1 inch equals 1 mile, covering approximately 13,000 square miles in the states of Washington, Oregon, California, Texas, Kentucky, Florida, and New Jersey. In addition to these standard quadrangles, planimetric and topographic maps, scale 1 inch equals 2 miles, of various army maneuver areas were published. Mosaics, for military use, were made from air photographs and published on a scale 1:20,000 for a total area of about 40,000 square miles. In addition, obsolete topographic quadrangles, scale 1 inch equals 1 mile, covering about 6,000 square miles, were revised.

New mapping at a scale of 1 inch equals 1 mile is in progress throughout about 30,000 square miles of area, and about 17,000 square miles additional have been photographed and surveyed for future mapping operations. Revision of obsolete inch to the mile quadrangles covering about 90,000 square miles is in progress, and air photographs have been taken for the revision of about 14,000 additional square miles. Revision mapping is completed or in progress in Washington, Oregon, California, Texas, South Carolina, Georgia, North Carolina, Virginia, New York, Pennsylvania, Maine, Michigan, and Ohio.

Extensive army maneuvers created an unprecedented demand for maps; for example, the maneuvers held in Louisiana and Texas required approximately six freight carloads of maps.

The Strategic Maps of the United States, described in *THE AMERICAN YEAR BOOK*, 1940 (page 287) have been completed, and several editions have already been printed of several of the sheets.

All horizontal and vertical control data, established by other Federal agencies, is being assembled and ad-

justed, and will be published for distribution.

The Corps of Engineers also makes extensive harbor and river surveys in connection with harbor improvement and flood control. The Mississippi River Commission surveys and publishes maps and charts of the Mississippi River and adjacent territory. The Lake Survey surveys the United States portion of the Great Lakes and issues nautical charts of those waters, Lake Champlain, and the St. Lawrence River.

POST OFFICE DEPARTMENT

The post-route and other maps prepared by the Post Office Department were described in *THE AMERICAN YEAR BOOK*, 1940 (page 287).

DEPARTMENT OF THE NAVY

The Hydrographic Office published 56 new nautical charts of foreign waters, of which eight were from original U. S. Naval Surveys; and five new aviation charts and 189 approach and landing chartlets. The Hydrographic Office has on issue a total of 2,666 nautical and 45 aviation charts of foreign areas, exclusive of several hundred charts printed for special naval use.

During 1941, hydrographic and air photographic surveys were made of certain areas recently acquired from Great Britain. Hydrographic surveys were also made in the vicinity of Cape Haitian, Haiti, and along the north coast of Venezuela, eastward of Margarita Island. Astronomic observations were made to determine the geographic positions required in connection with above projects.

DEPARTMENT OF THE INTERIOR

The Geological Survey published 77 new topographic quadrangle maps and 19 special maps during the year and, in addition, 51 new topographic maps were ready for printing. Editions of 27 new planimetric maps and 84 preliminary editions of topographic maps were also issued. Reprints were made of 246 topographic maps, and 215 additional had been corrected ready for reprinting.

VIII. PUBLIC RESOURCES AND UTILITIES

New topographic surveys of areas totaling 23,685 square miles were completed; 495 square miles of area were revised; and 3,974 square miles were mapped from air photographs supplemented by ground surveys. Planimetric maps, without contours, of 3,256 square miles were compiled from air photographs for preliminary publications. The areas surveyed were in 36 states and Puerto Rico; major areas being in Alabama, Arizona, California, Florida, Maine, Mississippi, Missouri, New Mexico, North Carolina, Tennessee, and Texas. The planimetric mapping was in Louisiana and Wisconsin. Puerto Rico, 17 states, the Tennessee Valley Authority, and the War Department cooperated in the mapping.

Air photographs covering 36,336 square miles were procured during the year for current and future mapping.

Control surveys in connection with the mapping comprised 10,206 linear miles of third-order leveling, 4,370 miles of third-order transit traverse, and the establishment of 508 triangulation stations. Eight bulletins, containing the results of third-order control surveys, were published, and several additional manuscripts had been completed.

In Alaska, 2,401 square miles were mapped at the reconnaissance scale of four miles to an inch, and 83 square miles were mapped in detail on a scale of one mile to an inch, or larger. An area of about 4,000 square miles was photographed, principally in the lowland area from Nenana, in the Tanana Valley, to Lake Minchumina.

Progress was continued on the Millionth Map of the World, scale 1:1,000,000. Sheet NJ-18, Chesapeake Bay was completed for publication and sheets NK-16, Chicago, and NK-17, Lake Erie, were being compiled.

The Transportation Map of the United States, scale 1:250,000, prepared for the Public Roads Administration, progressed; 21 new map sheets for Georgia and Idaho were published, and 36 new sheets for Florida, Minnesota, and Utah were being published at the end of the year.

In conjunction with water resources

studies, river-utilization surveys, in plan and profile, of 85 linear miles of streams were made; a detailed survey was made of one dam site, and a topographic survey of Nisqually Glacier in Washington.

The General Land Office surveys the public lands through its Cadastral Engineer Service, and prepares and files plats covering newly surveyed and resurveyed areas. Maps of the public land states, scale 1:792,000, are issued and revised at infrequent intervals.

The Office of Indian Affairs makes occasional surveys of Indian reservations. The National Park Service surveys and publishes maps of the national parks under its supervision. The Fish and Wildlife Service surveys the migratory fowl sanctuaries, bird refuges, and other areas under its jurisdiction.

The Board on Geographical Names (see *THE AMERICAN YEAR BOOK*, 1940, page 288) rendered decisions on 662 geographic names.

DEPARTMENT OF AGRICULTURE

The Agricultural Adjustment Administration, while not engaged in actual mapping, makes extensive use of air photographs to determine ground areas. During 1941 contracts were awarded for air photographs of 304,154 square miles, 1,608,680 square miles having been previously photographed. The majority of these photographs are approximately at the scale of 1:20,000, and are thus also suitable for use in mapping. Reproductions are made of practically all the photographs, including controlled enlargements to a scale of eight inches to the mile.

The Forest Service published approximately 59 maps of National Forest areas during the year. These maps were prepared from air photographs and other available data on scales of one, two, or four miles to the inch. They serve in administration, range surveys, timber surveys, and fire control within the National Forests. Air photographs for mapping covered some 21,865 square miles and planimetric maps were prepared from

FEDERAL SURVEYS AND MAPS

photographs for 19,030 square miles. Topographic maps, from ground surveys, covered 638 square miles.

The Bureau of Plant Industry issued during the year 21 soil survey reports with maps, of areas previously surveyed, and in cooperation with 31 states made detailed soil surveys of approximately 14,000 square miles and mapped by reconnaissance 757 additional square miles. These maps were described in *THE AMERICAN YEAR BOOK*, 1940 (page 288). The total number of such surveys which have been published to date is 1,499. At the close of the year 32 reports of previous surveys were being printed, 124 were in various stages of preparation for printing, and 35 surveys were in progress in the field.

The Soil Conservation Service published during the year planimetric maps of nine areas, scale 4 inches to the mile, covering about 913 square miles. These maps and their use were described in *THE AMERICAN YEAR BOOK*, 1940 (page 288). During the year contracts were awarded for air photographs of 16 new areas, totaling approximately 17,656 square miles, which is in addition to the 81,625 square miles of area previously photographed. Control surveys were made on 19 areas of various sizes, totaling 6,572 square miles. Office compilation was completed, or in progress, for maps covering approximately 6,000 square miles.

The Bureau of Agricultural Economics publishes compiled maps on which agricultural data are shown.

DEPARTMENT OF COMMERCE

The Coast and Geodetic Survey during 1941 published 15 new nautical charts of waters of the United States and possessions, of which nine were for naval use. Most of these were based on complete new hydrographic and topographic surveys of the respective areas. One new series is composed of charts Nos. 686, 687, and 688 of the St. Johns River, Florida on a scale of 1:40,000. Others include chart No. 572, Head of Chesapeake Bay, scale 1:40,000; chart No. 1262, Apalachicola to Cape San Blas, Florida,

scale 1:80,000; and chart No. 5007, Cape Mugu to Ventura, California, scale 1:40,000. The total number of nautical charts, which are under constant revision and of which revised editions are frequently issued, is 804, of which 163 of Philippine areas are published at Manila.

Hydrographic surveys were made covering 41,584 square miles, in which 89,301 linear miles of soundings were run. Topographic surveys were made covering 2,654 square miles. The coastal areas in which the principal surveys were concentrated were the Gulf of Maine, Chesapeake Bay, the eastern part of the Gulf of Mexico, the northern part of Puget Sound, Alaska, and the Philippine Islands.

Control surveys were made in the United States and Alaska, including 2,675 linear miles of first-order triangulation covering 40,445 square miles; 1657 linear miles of second-order triangulation covering 22,019 square miles; and 3,489 miles of first-order and 4,292 miles of second-order leveling. Reconnaissance for future triangulation extended along 1,921 linear miles of arc covering 30,920 square miles. The areas involved were in 36 states and Alaska. The control system of the United States, established by the Coast and Geodetic Survey, now includes 90,000 to 100,000 horizontal control stations and approximately 150,000 bench marks.

Three principal series of aeronautical charts, of which revised editions are frequently issued, cover the United States; 87 sectional charts, scale 1:500,000; 17 regional charts, scale 1:1,000,000; and six direction finding charts, scale 1:2,000,000. These are described in more detail in *THE AMERICAN YEAR BOOK*, 1940 (page 289). They are all now available, the remaining seven new regional charts having been published during 1941. A planning chart of the United States, scale 1:5,000,000 is also published. The series of eight Alaska aeronautical charts, scale 1:1,000,000, was completed during the year, and, in addition, a planning chart of this territory on a scale of 1:5,000,000. A series of six aeronautical charts of the Philip-

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pine Islands, scale 1:500,000, is nearing completion. A series of instrument approach charts of the principal airports and a series of radio facility charts have been started.

Thirty-five new planimetric maps of coastal areas were published, bringing the total of these available to 697. These maps were described in *THE AMERICAN YEAR BOOK*, 1940 (page 289). During the year additional planimetric maps were completed along the eastern shore of Chesapeake Bay and along the west coast of Florida north of Tampa. For this type of map additional air photographs were taken, in collaboration with the Coast Guard, of the northern part of San Francisco Bay, of the northeast coast of the Gulf of Alaska from Dry Bay almost to Cape St. Elias, and along the south coast of the Alaska Peninsula. Areas in the vicinity of Los Angeles, San Diego, and Newport, Calif. were also photographed for chart revision.

The Weather Bureau compiles and publishes the daily weather maps, and other maps which chart various meteorological data. The Bureau of Census compiles many maps for its own use in population and other census tabulation studies, a few of which are published. The Bureau of Foreign and Domestic Commerce compiles and publishes special, usually small scale, charts on which are depicted amount and flow of commerce and other statistics.

FEDERAL WORKS AGENCY

The Public Roads Administration, in cooperation with the State Highway Departments, is conducting highway planning surveys throughout the country which will eventually provide a complete series of state and county maps showing the location of 2,963,000 miles of rural roads and the character of culture served by them.

The state maps, generally on a scale of 1:500,000 have been completed in 35 states and partly completed in three others.

The county maps, generally on a scale of either 1 inch equals 1 mile or 1:62,500, were fully described in *THE AMERICAN YEAR BOOK*, 1939

(page 276) and 1940 (page 290). They have now been completed for approximately 95 per cent of the 3,070 counties in the United States. They are available for all of the counties (2,576) in 41 states and for 344 counties in the other seven states. Maps for the remaining 150 counties are in progress. Many of the states are also reproducing this series at half scale, approximately two miles to the inch, by lithographic methods and can furnish complete sets in atlas form for their states.

The supplementary series of county maps showing, respectively, rural post roads, school bus routes, and traffic flow data are approximately 75 per cent completed. These are created by the superposition of additional information on the county maps and are generally reproduced at the same scale.

The state and county maps described above are produced in cooperation with the State Highway Departments and are obtainable only from those departments.

The Transportation Maps, scale 1:250,000, are reproduced in color, and are compiled and published by the Public Roads Administration with the cooperation of the Geological Survey. The maps for 22 states, comprising 158 sheets, have now been published. These include 35 sheets for eight states which have been revised and larger scale sheets for the vicinities of New York and Philadelphia. The number of map sheets now available for the various states are Arizona 14, California 21, Connecticut 1, Delaware 2, Florida 12, Georgia 8, Idaho 13, Iowa 8, Maine 6, Maryland 3, Massachusetts 3, Michigan 10, New Hampshire 2, New Jersey 2, New York 7, Oregon 12, Pennsylvania 6, Rhode Island 1, South Carolina 5, Vermont 2, Washington 9, and Wisconsin 9.

TENNESSEE VALLEY AUTHORITY

The Tennessee Valley Authority is surveying and publishing approximately 50 new topographic quadrangle maps of its area each year. Maps

STATE GEOLOGICAL SURVEYS

covering approximately 8,000 square miles have been published, mostly in eastern Tennessee and western North Carolina, with small areas in southwestern Virginia and northern Georgia. Scattered quadrangles have been mapped in northern Alabama, central and western Tennessee, and western Kentucky. These maps are all on a scale of 1:24,000, and are compiled mainly by stereophotogrammetric methods from air photographs. This part of the work is executed by the Geological Survey in cooperation

with the Tennessee Valley Authority.

The Authority also makes extensive property surveys and cadastral maps for the purpose of land acquisition in connection with its multi-purpose reservoir projects. Navigational charts of the new reservoirs created by the dams recently built on the Tennessee River are being prepared and published on a scale of two inches to the mile. Ten such charts are now available, five of the Guntersville Reservoir in Alabama and five of the Chickamauga Reservoir in Tennessee.

STATE GEOLOGICAL SURVEYS

BY ROBERT H. DOTT

SECRETARY, ASSOCIATION OF AMERICAN STATE GEOLOGISTS

GENERAL

Minerals are of paramount importance in the twentieth-century world. They have played a very large role in modern industrialization, and their lack in certain nations has been a factor in provoking the present war.

There can be little doubt that the abundance of iron, copper, coal, petroleum, zinc, and lead in the United States has helped us to become an important manufacturing nation and world power. It is true that certain very important minerals are lacking, particularly tin and the ferro-alloy metals such as tungsten, chromium, manganese, nickel, and antimony, for making special types of steel. In normal times, these are used in relatively small quantities and are readily obtained from abroad. During times of war, however, not only are many sources of imports shut off, but most of these materials are required in larger quantities, hence efforts are redoubled to find and develop domestic supplies.

State geological surveys are making important contributions to the present national defense effort as well as to the economic well-being of the respective states, by investigating mineral resources. Independently, and in cooperation with the United States

Geological Survey and the U. S. Bureau of Mines, efforts are under way to find and use hitherto undeveloped deposits of iron, manganese, tungsten, chromium, and other metals vital to the defense program, and to benefitiate low-grade ores so that they can be utilized to replace foreign ores that are now unobtainable. From previous work, geological surveys have been able to supply information on raw materials and water supplies, and to furnish topographic and other maps, all of which have been of inestimable value in the selection of sites for new manufacturing plants, new army camps, airports, and the like, required for the national defense.

During 1941, 43 state geological surveys were active, with available state appropriations totalling approximately \$1,768,000. To this sum, the Federal Government, through the U. S. Geological Survey, Bureau of Mines, Coast and Geodetic Survey, Department of Agriculture, Work Projects Administration, and other agencies, has added \$1,071,000, making a total of \$2,839,000 available for state-sponsored investigations of mineral and water resources, topographic mapping, and other activities of value to the mineral industries. Approximately twice this sum was expended

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by the various agencies of the Federal Government on similar projects financed wholly from Federal funds.

ALABAMA

Basic and Economic Geology.—

Projects.* Manuscript on Hillabee schist; field work for report on the Pinkneyville granite; manuscript on the geology and natural resources of Tuscaloosa County; field work on the Cretaceous-Tertiary boundary in Alabama; manuscript on Alabama coal beds; manuscript on red iron ores of the Russellville district (cooperation Alabama Geological Survey with U.S.G.S.); manuscript on manganese in Alabama; state-wide mineral survey (cooperation with WPA). *Publications*: Brown Iron Ore of the Chulafinnee District; The Warrior Coal Field; Natural Resources of the Tennessee Valley Region in Alabama; Monthly Report on Oil and Gas Wells in Alabama.

Ground Water Resources.—*Projects*: Ground water investigations (cooperation with U.S.G.S.) *Publications*: The Ground Water Resources of the Cretaceous Area of Alabama; Fluoride in the Ground Water of the Cretaceous Formations of Alabama.

Stream Gaging.—*Projects*: Surface water investigations (cooperation with U.S.G.S.).

Others.—*Projects*: State-wide archaeological investigations (cooperation with WPA). *Publications*: Additions to Flora of Alabama; McQuorquodal Mound, a Manifestation of the Hopewell Phase in Alabama; The Bessemer Site.

ARIZONA

Basic and Economic Geology.—

Projects: Geology and ore deposits of the Tombstone district (cooperation of Bureau of Mines with U.S.G.S.); investigation of critical mineral deposits. *Publications*: Tungsten

Deposits of Arizona (Bull. 148); Minerals of Arizona (Bull. 149); Information Circulars on Non-Metallic Minerals.

Others.—*Projects*: Ore testing service; mineral and rock identification service; lectures in field on field tests for common metals.

Geologic Maps.—*Publications*: Geologic Map of the Superior District.

ARKANSAS

Basic and Economic Geology.—

Projects: State-wide mineral survey (cooperation with WPA); statistical study of coal mines in western Arkansas; study of zinc reserves in north Arkansas; clay in Clark and Dallas Counties; lignite in Ouachita County; calcite in Hot Springs County; gypsum in Howard County; (last three in cooperation with WPA). *Publications*: 11 County Mineral Reports (cooperation with WPA); Growing Import of State Geological Survey (pub. in *Mining and Metallurgy*); Are Our Aluminum Ore Reserves Adequate? (pub. do.) Mineral Resources of Garland, Montgomery, Pulaski and Saline Counties (Min. Rept. 3); Pike County Kaolin; Pitkin Limestone of Northern Arkansas; Block Diagram Showing Geology of Arkansas, Surface and Below Surface.

Topographic Mapping.—*Projects*: Topographic mapping in central Arkansas (cooperation with WPA); installation of magnetic stations for triangulation, leveling, and traversing. *Publications*: Following sheets ready for publication: Jacksonville; Cabot No. 1; Cabot No. 2; and Woodson. Following sheets being prepared for publication: Sheridan, Levy No. 2; Levy No. 3; Conway; Enola; Beede; Guy; Quitman; and Hiram.

Ground Water Resources.—*Projects*: Study of ground and surface waters of state (cooperation with WPA), study completed in 24 counties. *Publications*: Ground Water Report on Sebastian and Crawford Counties; (pub. do.) on Baxter, Logan, and Little River Counties.

Stream Gaging.—*Projects*: Stream gaging program in state (cooperation with U.S.G.S.).

* To conserve space, projects and publications are listed without description. Details available from respective state geologist. Abbreviations: U.S.G.S.—United States Geological Survey; U.S.B.M.—United States Bureau of Mines; U.S.C. & G.S.—United States Coast and Geodetic Survey; WPA—Works Projects Administration.

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Others.—Projects: Compilation of data for *Arkansas Sales Manual*. *Publications:* Map Showing Transportation Facilities, Mineral Resources, Principal Streams, and Stream Flow Data.

CALIFORNIA

Basic and Economic Geology.—

Projects: The Division of Mines, Department of Natural Resources has 22 projects in progress, including one on oil and gas, 11 on metallic minerals, one on non-metallic minerals, and 10 others. Ground water investigations, stream gaging, and topographic mapping are under the supervision of the State Engineer. *Publications:* Geology and Economic Mineral Deposits of the Newberry and Ord Mountains, San Bernardino County; Notes on the Geology of a Portion of the Calico Mountains, San Bernardino County; Geology and Mineral Resources of the Kernville Quadrangle; Geology of the Big Blue Group of Mines, Kernville; Mineral Resources of Trinity County; Geologic Investigations of the Chromite Deposits of California; California Earthquakes of the Mission Period, 1769-1838; Occurrence of Scheelite in Idaho—Maryland Mines at Grass Valley; Development of the Oil Industry; Tungsten Resources of California; Properties, Uses, Markets, etc. of California Commercial Minerals: Magnesite, Chromite, Manganese, Tungsten, Quicksilver, Antimony, Mica, Aluminum, Tin, Nickel, Beryl, Quartz, Asbestos, Platinum, Iodine, Borates, Lead, Zinc, Copper, Molybdenum, Fluorspar, Iron, and Zirconium.

Others.—Publications: California Mineral Production and Directory of Mineral Producers for 1939 (Bull. 119); Biennial Report of the State Mineralogist; Strategic Problems of the Mineral Industry in California; Strategic Mineral Procurement; Geologic Progress of the California State Division of Mines; Strategic Tax Exemptions; Act Authorizing Federal Loans for Strategic Minerals; Manner of Locating and Holding Mineral Claims in California (Bull. 120).

COLORADO

Basic and Economic Geology.—

Projects: Colorado does not have a State Geologist. The work of the Geological Survey is handled through the Geological Survey Board, and consists entirely in cooperative work with the U.S.G.S., on a matched-funds basis, the work being done under supervision of the U.S.G.S.

CONNECTICUT

Basic and Economic Geology.—

Projects: Areal geology of western Connecticut; the pegmatite dikes of eastern Connecticut; study and discovery of metallic minerals for defense needs; promotion of non-metallic minerals for defense needs. *Publications:* General Geology of Connecticut (Bull. 64).

Soil Surveys.—Projects: Work begun on a small scale.

Others.—Projects: General natural history, including botany and zoology.

GEORGIA

Basic and Economic Geology.—

Projects: Subsurface structure in the Coastal Plain area; Correlation of coal measures in Dade and Walker Counties; Origin of brown iron and manganese ores in the Cartersville district. *Publications:* Geology of the Crystalline Area; Geology of Dade and Walker Counties.

Ground Water Resources.—Projects: Ground water investigations (cooperation Division of Mines with U.S.G.S.).

Stream Gaging.—Projects: Stream-flow measurements (cooperation with U.S.G.S.).

Others.—Projects: Geophysical survey of Dougherty, Calhoun, and Baker Counties (Cooperative); quality of water (cooperation with U.S.G.S.).

IDAHO

Basic and Economic Geology.—

Projects: Seven Devils district, Adams County (cooperation Bureau of Mines and Geology with U.S.G.S.); Leadore-Gilmore studies, Lemhi County (cooperation with U.S.G.S.); Weiser mercury project, Washington County (co-

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operation with U.S.G.S.); survey of the beryl and sillimanite deposits in Latah County. *Publications:* Geology and Ore Deposits of the Rocky Bar District, Elmore County; Geology and Ore Deposits of the Clark Fork District, Bonner County; Geology of the Idaho Almaden Quick-silver Mine Near Weiser, Idaho; Faulting in Western Idaho and Its Relation to the High Placer Deposits.

Others.—Projects: Ore-dressing studies, particularly on strategic minerals. *Publications:* The metal and coal mining districts of Idaho, with notes on the non-metallic mineral resources of the State (cooperation with U.S.G.S.).

ILLINOIS

Basic and Economic Geology.—*Projects:* Pennsylvanian stratigraphy; Pennsylvanian paleontology; micropaleontology of pre-Mississippian, Mississippian, and Pennsylvanian rocks; paleobotany of the Pennsylvanian system; subsurface studies of Paleozoic formations; the Pleistocene system; geologic structures of the Illinois basin; areal investigations and geologic mapping; petrology of Illinois clays; oil and gas stratigraphy and structure; physical and chemical tests of oil sand cores; data on repressuring plant methods; studies of water flooding in Illinois oil fields; scouting of drilling wells; preparation of development maps of active areas in Illinois oil fields; geology and oil and gas resources of Illinois basin; constitution of Illinois coal, including chemical project on oxidation of Illinois coals; constitution of commercial coal fines; general coal report; physical properties of coal under three variables (temperature, pressure, and time); composition and fusibility of ash from Illinois coals; the nature of moisture in coal; review of literature on composition and constitution of coal; demonstration of smokeless briquets from Illinois coals; physical properties of clays; composition and base exchange characteristics of Illinois clays and shales, and the relation of these characteristics to their ceramic and other properties; clay re-

sources of the Chicago area; beneficiation of fuller's earth; utilization of fluorspar (chemical derivatives and influence on silicate melts); sand and gravel resources of Illinois; soundness of Chicago area dolomites; chemical stratigraphy of southern Illinois limestones; silicate melts, reaction of silica-alumina-lime-magnesia at elevated temperatures; study of surficial clays as bonding material for synthetic molding sands; chemistry of organic fluorine compounds; maps of industrial mineral deposits of Illinois; directory and map of the clay-products plants in Illinois. *Publications:* Geology and Mineral Resources of the Marseilles, Ottawa, and Streator Quadrangles (Bull. 66); Pennsylvanian Fusulinidae of Illinois (Bull. 68); Illinois Mineral Industry in 1940 (Rept. Inv. 74, Pt. I, Historical Summary); Contributions to Pennsylvanian Paleobotany (Rept. Inv. 75); Chester Ostracodes of Illinois (Rept. Inv. 77); Geographic Atlas of Illinois; Illinois Mineral Industry in 1939, with Special Discussion of the Distribution of Coal in 1937 (Rept. Inv. 63); Oil and Gas in 1940 (Ill. Pet. 37); Development in Eastern Interior Basin in 1940 (Ill. Pet. 38); "Trenton" Production in Illinois (Ill. Pet. 39); Chemical Properties of Illinois Crude Oils; Chemical Character of Illinois Brines; Oil and Gas Development in Illinois in 1939 (Ill. Pet. 35); Developments in Eastern Interior Basin in 1939, and first quarter, 1940 (Ill. Pet. 36); Porosity, Total Liquid Saturation, and Permeability of Illinois Oil Sands (Rept. Inv. 67); Geology and Oil Possibilities of Extreme Southern Illinois (Rept. Inv. 71); Recent Developments in Oil and Gas in Illinois (Circ. 67); Summary of Drilling Activity, Oil and Gas Drilling Reports, issued monthly; Moisture Relations of Banded Ingredients in an Illinois Coal (Rept. Inv. 73); Report on the Use and Significance of Banded Ingredients in Coal; Theory of Interrelation of Pressure, Temperature, and Time for Briquetting Illinois Coals Without Binder; Smokeless Coal Briquets from Illinois Deduster Dust, Rich in Fusain; Report on Interpreta-

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tion of Coal Ash Analyses from the Fusion Point of Ash; Effect of Preparation on Composition of Ash of Illinois' Coals, and Relationship to Ash Fusibility; Structure of Herrin (No. 6) Coal Bed in Madison County and Adjacent Parts of Bond, Clinton, Macoupin, St. Clair, Montgomery, and Washington Counties, with Notes on Oil and Gas Possibilities (Circ. 71); Geology of Cave-In Rock District, Hardin County, with Special Reference to Fluorspar; An Exploratory Study of Faults in the Fluorspar-Bearing Areas of Hardin County, by Earth Resistivity Method (Bull. 67, Pts. 1 & 2); Tests on Face Brick from Illinois and Other States (Rept. Inv. 64); Agricultural Limestone Resources of Cumberland, Effingham, Clay, Richland, and Jasper Counties (Rept. Inv. 65); Investigations of the Effect of Heat on Clay Minerals Illite and Montmorillonite (Rept. Inv. 66); Effects of Fluorspar on Silicate Melts with Special Reference to Mineral Wool (Rept. Inv. 68); Elements of the Petrographic Study of Bonding Clays and of the Clay Substance of Molding Sands, Mineral Composition and Texture of the Clay Substance of Natural Molding Sands, Relationship Between the Physical and Mineralogical Characteristics of Bonding Clays (Rept. Inv. 69); Petrographic and Ceramic Properties of Pennsylvanian Shales of Illinois (Rept. Inv. 72); Agricultural Limestone Distribution in Illinois in 1939 (Circ. 61); Progress Report on the Investigation of the Properties of Illinois Shales and Clays as Mortar Mix (Circ. 62); Profile of Soil Weathering and its Importance in Highway Construction; The Clay Minerals in Soils and Their Significance (Circ. 65); Agricultural Limestone Distribution in Illinois in 1940, preliminary report (Circ. 72); Areal Geologic Map of Illinois; Pleistocene Map of Illinois; Chicago Geologic Maps (22 sheets).

Topographic Mapping.—*Projects:* Forreston, Maquon, Mt. Carroll, Newton, St. Elmo sheets; leveling in Crete, Merom, and Peotone quadrangles. *Publications:* Carmi, Cissna Park, Freeport, Galva, Ina, Lena,

Mulberry Grove, Rose Hill, Keithsburg, and Miles sheets; bulletins on level data. (All in cooperation with U.S.G.S.)

Ground Water Resources.—*Projects:* Electrical resistivity survey of buried sand and gravel deposits in search for ground water supplies; cooperation with State Water Survey Division; Cooperation with State Well Drillers' Association; many reports on local ground water geology for municipalities, other political subdivisions, and industrial plants.

Soil Surveys.—*Projects:* Informal cooperative work on the geology of Illinois soils, with the State Soil Survey.

Others.—*Projects:* Current study of well cuttings; cooperation with National Resources Committee; Cooperation with various State and Federal Departments and Commissions. *Publications:* Mica in Argillaceous Sediments (Reprint of Rept. Inv. 44); Typical Rocks and Minerals of Illinois (Reprint of Educ. Series 3); Revised Edition of Publications on the Geology, Mineral Resources, and Mineral Industries of Illinois; The Research Work and Public Activities of the State Geological Survey (Circ. 64); Some Studies Presented at State Academy of Science in 1940; Fusain Content of fine sizes of Illinois coal, Preglacial River Ticona, Aerial Photography, The Use of Pipette Analysis in Clay Research, The Introduction of Fluorine into Aromatic nuclei by Means of Ammonium Fluoborate, Acetylaminio Toluene (Circ. 68); Geology and its Relation to the Chemistry Teacher (Circ. 69); Oil and Gas Map of Illinois, Aug. 1, 1940.

INDIANA

Basic and Economic Geology.—*Projects:* Sample study of oil wells; Survey of coal deposits; county oil field maps. *Publications:* Well log supplements of Posey, Gibson, Vanderburgh, and Randolph Counties; 15 county oil field maps.

Topographic Mapping.—*Projects:* 7 quadrangles completed; 14 quadrangles in progress (cooperation Department of Conservation with U.S.G.S.).

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Ground Water Resources.—*Projects:* Ground water survey (cooperation with U.S.G.S.).

IOWA

Basic and Economic Geology.—*Projects:* Pleistocene history of Mississippi River (cooperation of the Iowa Geological Survey with Illinois Geological Survey); Pleistocene loesses; Illinoian and post-Illinoian Pleistocene geology of Iowa; Pennsylvanian stratigraphy of Iowa; oil and gas possibilities in Iowa part of the Forest City basin; administration of oil and gas drilling law; quality of Iowa coal; ceramic properties of underclay (cooperation with depts. of geology and ceramic engineering, Iowa State College). *Publications:* Administrative Reports for 1934-1939; Pleistocene Gravels of Iowa; Pollen Analysis of Inter-Gracial Peats of Iowa; Geology of Adams County; Mineral Production in Iowa, 1933-1938; Summary of Mineral Production, 1895-1938.

Ground Water Resources.—*Projects:* Forecasting and service on wells; subsurface geology of Iowa; production and water level studies; quality of Iowa waters (all in cooperation with U.S.G.S.).

Stream Gaging.—*Projects:* General program of stream and lake gaging (cooperation with U.S.G.S.).

KANSAS

Basic and Economic Geology.—*Projects:* Geologic studies in southwestern Kansas; Cenozoic Geology of Kansas; stratigraphy and paleontology of Carboniferous and Permian rocks; subsurface stratigraphy of Kansas; the Bronson group; the Pleistocene of northeastern Kansas; stratigraphy of Dakota formations in north-central Kansas; oil and gas developments in eastern Kansas, 1937-1941; geology and oil and gas resources of the Forest City basin (cooperation of State Geological Survey with U.S.-G.S.); studies of insoluble residues; Crawford County investigation; fuel values and ash contents of Kansas coals; chemical and technological investigations of southeastern Kansas

coals for coking and by-product possibilities; geological techniques for exploration of lead and zinc ores (cooperation with producers); investigation of bentonite deposits in western and northwestern Kansas; foundry sand resources; Kansas building stone resources; plant treatment of non-metallic mineral products. *Publications:* Classification in the Marmation Group, Lower Pennsylvanian in Kansas; Western Kansas Oil and Gas Developments During 1941; Treatment of Mine Water as a Factor in the Mineral Production in Southeastern Kansas; Preliminary Report on the McLouth Gas and Oil Field, Jefferson and Leavenworth Counties; The Geology of Riley and Geary Counties; The Otis gas and oil pool, Rush and Barton Counties, Kansas; Dakota Clays of Kansas; Miami County Oil and Gas Resources.

Topographic and Planimetric Mapping.—*Projects:* A compilation of elevation data; vertical control of 15-minute quadrangles (cooperation with U.S.G.S.); Mapping of Oskaloosa quadrangle (cooperation with U.S.-G.S.); planimetric mapping in two quadrangles in northeastern Kansas (cooperation with U.S.G.S.). *Publications:* Topographic Sheets on Sedgwick SW $\frac{1}{4}$; Sedgwick SE $\frac{1}{4}$; Wichita NW $\frac{1}{4}$; Wichita SW $\frac{1}{4}$; Wichita SE $\frac{1}{4}$; Wichita NE $\frac{1}{4}$; Douglas NW $\frac{1}{4}$; Plains; Terryton Quadrangles.

Ground Water Resources.—*Projects:* Geology and ground water resources of Hamilton and Kearny Counties (cooperation with U.S.-G.S.). *Publications:* Geology and Ground Water Resources of Stanton County; (pub. do.), Ford County; (pub. do.), "Eguus beds" area; (pub. do.), Finney and Gray Counties; (pub. do.), Barber County; (pub. do.), Scott County; Ground Water Conditions in the Vicinity of Lawrence; Ground Water Resources of Mississippian and Older Rocks in Bourbon, Cherokee, and Labette Counties; Reconnaissance of Ground Water Resources in Atchison County; Meade Artesian Basin.

Others.—*Projects:* Upper Pennsylvanian gastropods from Kansas; Mid-

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dle and Upper Pliocene lizards, toads and salamanders in Kansas; the Borchers fauna, Pleistocene of Western Kansas; new Permian corals from Kansas, Oklahoma and Texas.

KENTUCKY

Basic and Economic Geology.—*Projects:* Distribution of the woody plants of Kentucky in relation to geologic regions; geology of the Big Clifty quadrangle; subsurface geology of Larue County.

LOUISIANA

Basic and Economic Geology.—*Projects:* Geology of Beauregard and Allen Parishes; Geology of Webster Parish; geology of DeSoto and Red River Parishes. *Publications:* Tertiary Bryozoa of Louisiana (Bull. 21); Geology of Vernon Parish (Bull. 22); Lower Tertiary Faunas of Louisiana (Bull. 23); Lignite Deposits in Louisiana (Pamphlet 4); Oil and Gas Field Map of Louisiana.

Ground Water Resources.—*Projects:* Ground water resources of Acadia and Jefferson Parishes; (do.), Bossier and Caddo Parishes; (do.), Northern Louisiana (cooperation of Geological Survey with U.S.G.S.). *Publications:* Ground Water Resources in Grant and LaSalle Parishes (Bull. 20).

MICHIGAN

Basic and Economic Geology.—*Projects:* Study of sand dunes (cooperation Department of Conservation with Univ. of Michigan); surface geology of three northern counties (cooperation with Mich. State College); magnetic and geologic survey of copper and iron districts; stratigraphic studies from well samples; structural studies of oil fields; surveys of iron and copper regions; stratigraphy of Traverse limestone (cooperation with Mich. State College); Mackinac Island (cooperation with Univ. of Michigan). *Publications:* Dunes of Michigan; Surface Geology of Northern Portion of Southern Peninsula; Magnetic and Geological Survey of Indiana Area, Ontonagon County; (pub. do.), the Menominee Iron Bear-

ing District; Annual Appraisal of Iron and Copper Mines; Survey of Dolomites of Michigan; Traverse Rocks of Thunder Bay Region; Geologic Maps—Trends of Anticlinal Folding; Contour Map on Base of the Drift; Hopkins Township, Allegan County; Missaukee County; Newaygo County; Bangor Township, Van Buren County; Northern Peninsula Base Map; Lincoln Township; Osceola County; Riverside Township, Missaukee County; Kawkawlin Field, Bay County; Headquarters Field, Roscommon County; Trowbridge Township, Allegan County.

Ground Water Resources.—*Projects:* Collection of measurements to water in 75 ground water observation wells (cooperation with U.S.G.S.); operation of 20 lake gauging stations (cooperation with Fish Division, Michigan Dept. of Conservation). *Publications:* Graphs of Movement of Ground Water Tables in Michigan.

Soil Surveys.—*Projects:* Continuing work on surface geology on soil maps (cooperation with Michigan State College, Univ. of Michigan).

MINNESOTA

Basic and Economic Geology.—*Projects:* Investigations of Cook County; (do.) Duluth metropolitan area; slate metamorphism, correlation, concretions; Paleozoic stratigraphy; sediments in Mississippi River gorge; manganese in the Cuyuna Range; correlation of the iron ranges; fullers earth; paper clays. *Publications:* Bulletin 29; Structural Geology of the Knife Lake Area of Northeastern Minnesota (published in *Bull. Geol. Soc. Amer.*, Vol. 52).

Topographic Mapping.—*Projects:* Eskers of Minnesota.

Ground Water Resources.—*Projects:* Investigations in south half and northeast quarter of state.

MISSISSIPPI

Basic and Economic Geology.—*Projects:* Mineral resources of various counties. *Publications:* Mineral Resources of Warren County; Mineral Resources of Forrest County; Mineral Resources of Union County.

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Ground Water Resources.—*Projects:* Ground water survey.

Stream Gaging.—*Projects:* Surface water survey.

MISSOURI

Basic and Economic Geology.—*Projects:* Stratigraphic studies from drill records, statewide; studies of oil possibilities in southeast and northwest Missouri; cobalt-nickel deposits; manganese deposits; tungsten deposits; lead and zinc deposits of southwest Missouri. *Publications:* Geology of Lowland Area of Southeast Missouri; subsurface Geology of North Missouri; Marbles of Missouri; 6 Geologic Maps of Southwest Missouri Zinc District.

Topographic Mapping.—*Projects:* 2,000 square miles to be mapped (cooperation of Geological Survey and Water Resources with State Highway Dept., and U.S.G.S.). *Publications:* Topographic maps on nine 15-minute sheets (approximately 250 square miles per quadrangle).

Ground Water Resources.—*Projects:* State-wide studies of approximately 45,000 samples of drill cuttings from 700 wells.

Stream Gauging.—*Projects:* State-wide survey, based on 95 gauging stations (cooperation with U.S.G.S. and cities). *Publications:* Large volume of flow records.

MONTANA

Basic and Economic Geology.—*Projects:* State-wide mineral resources survey (cooperation of Bureau of Mines and Geology with WPA). *Publications:* Physiography of Gravelly Range; Study of Montana Clays; Study of Paleozoic Limestones of Montana; Bibliography of Montana Geology (compiled in cooperation with WPA); Directory of Oil Properties (compiled in cooperation with WPA); Geology and Ore Deposits of Jardine Districts; Platiniferous Gold-Copper Deposits of Revais Creek District; Geology and Ore Deposits of Highland District.

Ground Water Resources.—*Projects:* General Study.

Others.—*Projects:* Mineral dress-

ing and metallurgical studies for beneficiation of Montana ores.

Geologic Maps.—*Projects:* Geologic Map of Montana (cooperation with U.S.G.S.).

NEBRASKA

Basic and Economic Geology.—*Projects:* Study and revision of Archimedes has been completed, manuscript submitted to Geol. Soc. America; study of King Brother's bryozoan collection from Pennsylvanian rocks of Glass Mountains, Texas, is being continued; logging and study of deep wells drilled for oil and gas. Nebraska has oil production near Falls City, coming from Devonian rocks. *Publications:* Correlation of the Formations of the Laramie Range, Hartville Uplift, Black Hills, and Western Nebraska (Bull. 13).

Ground Water Resources.—*Projects:* Ground Water Survey of Republican Valley region, to the west side of Red Willow County (cooperation Geological Survey with U.S. G.S.); inventory of irrigation wells in Nebraska shows about 2,640 wells in operation in the Platte Valley region from west of North Platte, to the mouth of the valley, and that more than 100,000 acres of land are being irrigated from these wells.

Soil Surveys.—*Projects:* Soil Survey of Cherry County has been completed. Re-survey of certain counties is under way.

NEVADA

Basic and Economic Geology.—*Projects:* This Bureau operates as part of the University of Nevada, and its projects include geologic field work and services to the mineral industries. One publication is in progress, and one completed.

NEW JERSEY

Basic and Economic Geology.—*Projects:* The Ogdensburg-Culvers Gap recessional moraine in Sussex County; the origin and composition of peats and their occurrence in New Jersey. *Publications:* The Stratigraphy, Fauna, and Correlation of the Vincentown Formation.

STATE GEOLOGICAL SURVEYS

Topographic and Planimetric Mapping.—*Projects:* Somerville and Pluckemin topographic sheets being revised. *Publications:* Atlas Sheets 26 and 32 revised and ready for printing (topographic); County and Municipality Map of New Jersey, revised and ready for printing (planimetric).

Others.—*Publications:* Bench Marks in Ocean County; Geophysical Methods of Exploration and Their Application to Geological Problems in New Jersey.

NEW MEXICO

Basic and Economic Geology.—*Projects:* Oil and gas resources of New Mexico; geology and ore deposits of Chloride Flats; pumice deposits of New Mexico; clays and shales of New Mexico; stratigraphic and paleontologic studies of the Pennsylvanian and Permian of New Mexico; mineral identifications.

Others.—*Publications:* Mining, Oil, and Mineral Laws of New Mexico.

NEW YORK

Basic and Economic Geology.—*Projects:* Geology of the Cattaraugus quadrangle; Geology of the Schunemunk quadrangle (revision of map); geology of the Utica quadrangle; geology of the Lake Sanford titaniferous iron ores. *Publications:* Glacial Geology of the Syracuse Region (maps); Geology of the Saranac Lake Quadrangle (map); Geology of the Oriskany Quadrangle (map); Guide to the Geology of the Lake George Region (map); Geology of the Wellsville Quadrangle (map); Geology of the Catskill and Kaaterskill Quadrangles (maps); Geology of the Coxsackie Quadrangle (map); Geology of the Willsboro Quadrangle (map); Paleontologic Papers.

NORTH CAROLINA

Basic and Economic Geology.—*Projects:* Geology of the Raleigh quadrangle; economic geology of North Carolina pegmatities; manganese deposits of North Carolina; chromite deposits of North Carolina; vermiculite deposits of North Caro-

lina; limestone deposits of the Yadkinville area. *Publications:* China Clay Manufacturing Opportunities in North Carolina (Bull. 40); Forsterite Olivine Deposits of North Carolina and Georgia (Bull. 41); The Mining Industry in North Carolina for the Years 1936-1941.

Ground Water Resources.—*Projects:* Ground water survey of the state.

NORTH DAKOTA

Basic and Economic Geology.—*Projects:* Study of Pleistocene geology of North Dakota; study of manganese deposits in Turtle Mts. *Publications:* Geology of the Heart Butte Quadrangle (Bull. 13); Geology of Southern Portion of Morton County; Selected Deeper Well Records (Bull. 12); Sodium Sulfate Deposits in North Dakota.

Ground Water Resources.—*Projects:* Ground water irrigation study near Oakes; geology and ground water resources of Pembina County; observation well program.

OHIO

Basic and Economic Geology.—*Projects:* Collection of limestone samples from eastern Ohio, and chemical analyses; location of old coal mines, study of Sharon conglomerate in Mahoning County; collection of well logs and cuttings, microscopic examination of latter; mapping of subsurface structure; pumping tests in Hocking Valley to determine quantity of brines available for chemical industries. *Publications:* Clarion Field of Hope and Lincoln Furnace Fields (Bull. 40); Mark, Tufa Rock, Traver tine, and Bog Ore in Ohio (Bull. 41); Dolomites and Limestones of Western Ohio (Bull. 42); Geologic Map of Ohio.

Ground Water Resources.—*Projects:* Exhaustive study of ground water resources in Ohio, by the State Water Supply Board, of which the state geologist is chairman.

OKLAHOMA

Basic and Economic Geology.—*Projects:* Detailed geologic mapping,

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study of stratigraphy and mineral resources of Tulsa County; mapping and stratigraphic studies of Pennsylvania in east-central Oklahoma: (do.), northeastern Oklahoma; tests on coking and by-product properties of eastern Oklahoma coal (cooperation with U.S.B.M.). *Publications*: Raw Materials in Glass Making (Min. Rept. 9); Manganese (Min. Rept. 10); Catalogue of Oklahoma Minerals, Rocks and Fossils (to accompany collection given to schools).

Ground Water Resources.—*Projects*: Geology and ground water resources of Cimarron County; (do.), Beaver County; ground water studies of North Canadian Valley above Oklahoma City (all in cooperation of Geological Survey with U.S.G.S.). *Publications*: Geology of Oklahoma Ground Water Supplies (Min. Rept. 11).

Others.—*Projects*: Oklahoma Mineral Industries Conference, sponsored by Okla. Geol. Survey. *Publications*: The Hopper, a monthly mimeograph publication of the Mineral Industries Conference; Control Survey Circular #2, South-Central Oklahoma; Control Survey Circular #3, North-Central Oklahoma.

OREGON

Basic and Economic Geology.—*Projects*: Summer field work in Columbia County, including investigations of limonite deposits which may be used in proposed steel plant installations; inventory of zinc resources of Oregon, in connection with proposed electrolytic zinc smelter; inventories of manganese, chromite and antimony; WPA project consisting of test-pitting and drilling of chromite-bearing black sand lenses in the coastal area. *Publications*: Monthly magazine, *The Ore-bin*; three colored geologic maps covering 30-minute quadrangles (partly in cooperation of Department of Geology and Mineral Industries with U.S.G.S.); Report on the Geology of the Wallowa Quadrangle, including colored geologic map; two Mines Catalog Bulletins; Short paper on Willamette Valley limestone.

Others. Projects: Mineral separation work on samples (Cooperation with Oregon State College); geophysical work in the quicksilver mining area (cooperation with U.S.G.S.).

PENNSYLVANIA

Basic and Economic Geology.—*Projects*: Martinsburg stratigraphy; the Silurian system in Pennsylvania; mapping Devonian formations; guidebook to Philadelphia region; geology and mineral resources of the Smicksburg quadrangle, southeastern Clearfield County; geology and mineral resources of Warren County; (do.), Venago County; mineral resources of Bucks County; oil and gas in the Oil City quadrangle; deep oil and gas sands; oil and gas in the Kinzua quadrangle; (do.), Sheffield quadrangle; (do.), Tionesta quadrangle; (do.), Kane quadrangle; manganese ores. *Publications*: Lehigh County Report; Brookville Quadrangle Report; Guidebook to the Pennsylvania Turnpike; Clay and Shale Resources of Pennsylvania; Petroleum Geology of the Franklin Quadrangle; Upper Devonian and Lower Mississippian; Subsurface Sections Across Western Pennsylvania; Music Mountain Oil Pool; Summit Gas Pool; Oil and Gas in the Titusville Quadrangle.

Topographic Maps.—*Projects*: Ridgway, Brockwayville, Caledonia, and Grover quadrangles (in cooperation with U.S.G.S.). *Publications*: Marienville, Kinzua, Sheffield, and Allentown West Quadrangles.

Ground Water Resources.—*Projects*: Ground water investigations (cooperation with U.S.G.S.). *Publications*: Summary of Ground Water Resources of Pennsylvania.

SOUTH DAKOTA

Basic and Economic Geology.—*Projects*: Continuation of magnetic survey. *Publications*: Stratigraphy of Pierre Formation (Report of Investigations #43); Pegmatite Minerals near Custer (R.I. #44); Magnetic Survey of Central South Dakota (R.I. #45); Geology of South Dakota (Bull. 13.)

Ground Water Resources.—*Proj-*

STATE GEOLOGICAL SURVEYS

ects: Ground water investigations (cooperation with U.S.G.S.). *Publications:* Miller City Water Supply (R.I. #40); White River Pump Irrigation (R.I. #41).

TENNESSEE

Basic and Economic Geology.—

Projects: Re-examination of manganese deposits of Tennessee; examination of mineral deposits in connection with the national defense; special projects on iron, coal, zinc, manganese, clay and limestone. *Publications:* Manganese Deposits of Tennessee (revised).

Others.—Projects: Examinations for possible plant sites; color motion picture of the mineral industry of Tennessee.

TEXAS

Basic and Economic Geology.—

Projects: Geology and minerals of the Llano region; Mississippian of the Llano region; Collection of vertebrate fossils; geology of Houston County; investigation of Coastal Plain geology; Mineral investigations of Nolan, Llano, Crosby, Anderson, Gonzales, Polk, and Houston counties (cooperation of U. of Texas Bureau of Economic Geology with WPA). *Publications:* The Larger Invertebrates of the Navarro Group in Texas, Exclusive of Corals and Crustaceans, and Exclusive of the Fauna of the Escondido Formation, (Univ. of Texas Pub. 4101); Petroleum Resources of Texas; Catalogue of North American Early Tertiary Fossils of the Gulf and Atlantic Coastal Plain.

VERMONT

Basic and Economic Geology.—

Projects: Search for new mineral deposits. *Publications:* Report of the State Geologist on the Mineral Industries of Vermont; Biennial Report of the State Geologist, due in 1942.

Topographic Mapping.—Projects: Topographic mapping (cooperation of Geological Survey with the U.S.G.S.). *Publications:* Planifield Quadrangle.

VIRGINIA

Basic and Economic Geology.—

Projects: Geology and mineral re-

sources of Abingdon quadrangle; (do.), Buena Vista quadrangle; (do.), Vesuvius quadrangle; (do.), Augusta County; (do.), Frederick and Clarke Counties; (do.), Giles County; (do.), Smyth County; (do.), the marble belt southwest of Lynchburg; geology of the Hot Springs district; (do.), Shenandoah National Park; (do.), State Parks in Virginia; geology and mineral resources of Burkes Garden quadrangle; (do.), Tazewell County; geology of the Great Gossan Lead in Floyd, Carrol, and Grayson Counties; Blue Ridge hematite; bauxite deposits; valley limestones. *Publications:* Geology of the Appalachian Valley in Virginia (Bull. 52); The Early Grove Gas Field, Scott and Washington Counties (Bull. 56) Rocks and Minerals in Virginia (Bull. 57) Publications on the Geology and Mineral Resources of Virginia (Circ. 2).

Topographic and Planimetric Mapping.—Projects: Berryville, Capon, Bridge, Chester, Clarksville, Drewrys Bluff, Dutch Gap, Front Royal, Gerrardstown, Hightown, Hopewell, Lovington, Middletown, Midlothian, Mt. Jackson, Orkney Springs, Pounding Mill, Pulaski, Richlands, Rustburg, Weyers Cave, and Winchester quadrangles. Completed: Burkes Garden, Glen Allen, Vesuvius, and Westhampton quadrangles.

Ground Water Resources.—Projects: The York-James Peninsula; chloride studies; industrial ground water at Franklin; quantitative study of ground water supply from crystalline rocks, Fairfax (all in cooperation of Conservation Commission with U.S.G.S.). *Publications:* Ground Water Resources of the Southeastern Virginia Coastal Plain (Circ. 1).

WASHINGTON

Basic and Economic Geology.—

Projects: Economic investigations of the more important industrial minerals, with emphasis on (1) those of special interest in the national emergency, and (2) those given added economic importance through the availability of Bonneville and Grand Coulee hydroelectric power. Such minerals include: Chromium, tung-

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sten, nickel, mercury, manganese, magnesite, coal, alunite, salines, and diatomite. *Publications*: Clays and Shales of Washington (Bull. 24).

Topographic Mapping.—Up to Jan. 1, 1941, final maps or advance sheets were available for about 69 per cent of the area of the state; mapping had begun, or been authorized for an additional 9 per cent. Much of the work has been done by the U.S.G.S. and the U.S. Army, financed entirely from Federal funds. The state of Washington cooperates, on a matched-funds basis, in the preparation of several sheets, annually.

Others.—The Division renders considerable field services to the mineral industries, in the fields of metallic and non-metallic minerals.

WEST VIRGINIA

Basic and Economic Geology.—*Projects*: Devonian of West Virginia; report on Wetzel County; physical and chemical properties of natural gas (2nd report); gas in coal; manganese and iron ore; Clays of West Virginia. *Publications*: Silurian of West Virginia.

Ground Water Resources.—*Projects*: Ground Water report for the state; gauging of streams (both in cooperation Geological and Economic Surveys with U.S.G.S.)

Soil Surveys.—*Publications*: Greenbriar County (cooperative).

Others.—*Projects*: Gas analysis; drill cores and cuttings; routine analysis of brines and minerals. *Publica-*

tions: Oil, Gas, Pipelines, Refineries and Compressor Stations in West Virginia.

WISCONSIN

Basic and Economic Geology.—*Projects*: Road materials surveys.

Planimetric Mapping.—*Projects*: Mapping by use of aerial photographs in northeastern Wisconsin, State geologist advisor on work (cooperation between state highway department and U.S.G.S.). *Publications*: Alvin, Goodman, and Pembine Quadrangles.

WYOMING

Basic and Economic Geology.—*Projects*: Geology of the Como Bluff region, Carbon County; geology of the Bates Park region, Natrona County; geology along the north flank of the Laramie Range; miscellaneous investigations on oil and gas; miscellaneous investigations on metallic minerals; vermiculite deposits of Wyoming; miscellaneous investigations of non-metallic minerals. *Publications*: Titaniferous Magnetite Deposits of the Laramie Range (Bull. 31); Structure of the Elk Mountain District, Carbon County (Bull. 33); Geology of Freeze-out Mountain-Bald Mountain Area, Carbon County; Geology of the Southern Part Labarge Region, Lincoln County.

Ground Water Resources.—*Publications*: Underground Water Resources of Chugwater Creek, Laramie River, and North Laramie River Valleys, Wyoming (Bull. 32).

RECLAMATION AND IRRIGATION

BY JOHN C. PAGE

COMMISSIONER, BUREAU OF RECLAMATION, DEPARTMENT OF THE INTERIOR

THE BUREAU OF RECLAMATION

The Bureau of Reclamation, U.S. Department of the Interior, was created by an Act of Congress, June 17, 1902, for the purpose of survey, examination, construction, and operation of works for the reclamation by irri-

gation of arid and semi-arid lands in the western states. It is engaged in the construction, operation or supervision of the operation of 81 irrigation projects or divisions of projects in 16 arid and semi-arid states in the West, which will furnish ultimately a

RECLAMATION AND IRRIGATION

full or supplemental water supply to approximately 12,000,000 acres of thirsty land.

The funds for this work have come from repayments by the water users, from oil leasing and other mineral operations, from the sale of public lands, and by allotments and direct appropriations by the Congress. The money expended which is reimbursable under the Reclamation law is returned to the United States Treasury for deposit in the Reclamation revolving fund by payments of settlers and from sales of power and water.

The Commissioner appointed by the President and under the supervision of the Secretary, is in administrative charge of the Bureau of Reclamation. He is supported by a staff of 7,636 employees in the Washington office and 57 field offices. A Chief Engineer at Denver, Col. is in general supervision of the engineering and construction activities.

The Bureau of Reclamation maintains a photographic file of negatives of scenes on the projects from beginning of construction through the period of settlement and development. It has available for distribution motion picture films (16 and 35 millimeter) on the subjects of "Boulder Dam," "Grand Coulee Dam," and "Reclamation in the Arid West." In addition to illustrated folders and booklets, pamphlets, and leaflets on the various projects, which are mailed without charge upon request, the Bureau has published a number of valuable technical and semi-technical books which may be purchased by writing to the Commissioner, Bureau of Reclamation, Washington, D. C.

LAND TO BE IRRIGATED

Since the Bureau of Reclamation was established it has placed works in operation to serve more than 4,000,000 acres of land which support approximately 1,000,000 people. Of this total acreage approximately 2,500,000 acres were once unproductive desert and 1,500,000 acres were in non-Federal irrigation districts which had inadequate water supplies. The program in progress will bring in 2,500,000 acres

more and provide more than 5,000,000 acres of land now, short of water, with a supplemental supply. The Bureau of Reclamation estimates that as many as 20,000,000 acres additional can be irrigated with water resources as yet undeveloped and under policies now in effect. The future growth and stabilization of conditions in the West will be correlated in large measure with the conservation of these remaining water resources and their beneficial use.

CONSTRUCTION PROGRAM

During the 1941 fiscal year the Bureau of Reclamation continued its major construction program. Work was in progress on 37 projects in 14 states. Of the 17 dams under construction, eight were completed, which brought to 163 the total number of dams completed by the Bureau since 1902. Those completed were: Crane Prairie, a 40-foot earth-fill structure on the Deschutes project in Oregon; Dutch Slough Dam on the Delta division of the Central Valley project in California; the Entiat and Icicle Creek Dams Nos. 1, 2, 3, 4, and 5, all small diversion dams constructed on the Columbia Basin project in Washington in connection with migratory fish control operations. The dams under construction include: Grand Coulee Dam, a concrete, straight-gravity structure 550 feet high, on the Columbia Basin project in Washington, 96.7 per cent complete; Shasta Dam, a 602-foot, straight-gravity concrete structure on the Central Valley project in California, 53.6 per cent complete; Friant Dam, of the straight-gravity type, 320 feet in height, also on the Central Valley project, 72.6 per cent complete; Green Mountain Dam, a 274-foot earth-fill structure on the Colorado-Big Thompson project in Colorado, 50 per cent complete; Vallecito Dam, a 143-foot earth-fill structure, on the Pine River project in Colorado, 87 per cent complete; Wickiup Dam, also of the earth-fill type, 100 feet in height on the Deschutes project in Oregon, 19 per cent complete; Marshall Ford Dam, a 270-foot concrete, straight-

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gravity structure with an earth embankment extending from the left abutment, on the Colorado River project in Texas, 75 per cent complete; Deer Creek Dam, an earth-fill embankment, 235 feet high, on the Provo River project, Utah, 85 per cent complete; and the Box Butte Dam, a 64-foot earth-fill structure on the Mirage Flats project in Nebraska, on which government forces started construction in May, 1941.

Several of these dams are outstanding in height and volume. Grand Coulee, nearing completion on the Columbia River is 4,300 feet long and requires the placing of 10,500,000 cubic yards of concrete, making it the largest concrete structure in the world. Shasta, 602 feet in maximum height above foundation, will be second in height to the 726-foot Boulder Dam, highest in the world, and second in size to Grand Coulee Dam.

In the 39 years of its existence the Bureau has completed the following construction works on its irrigation projects: 85 storage and 78 diversion dams; 50 power plants; 364 pumping plants; 367 tunnels; 16,017 miles of canals and laterals; 5,931 miles of ditches and drains; 206,043 canal structures; 14,072 bridges; 22,504 culverts; 2,175 miles of pipe; 6,427 flumes; 3,735 miles of roads; and 5,403 miles of transmission lines. The Bureau has excavated 580,845,369 cubic yards of earth and rock and placed 27,365,713 cubic yards of concrete in which 31,038,966 barrels of cement were used.

COLUMBIA BASIN PROJECT

An outstanding project under construction is the Columbia Basin project, designed to provide water for the irrigation of 1,200,000 acres of dry land in central Washington; the generation of large blocks of hydroelectric power for irrigation pumping requirements, and industrial and urban consumption; and river regulation and improvement of navigation. Grand Coulee Dam is practically completed, and a reservoir 151 miles in length, extending to the Canadian border, is being formed by the dam. Power gen-

eration began at Grand Coulee Dam on March 22, 1941, when two 10,000-kilowatt station service units went into operation. Three of the giant 108,000-kilowatt generators were scheduled for operation in February, 1942, and three more in 1943, by which time Grand Coulee will rank second only to Boulder Dam as the largest producer of hydroelectric energy in the world. Land classification and appraisal of the irrigable area are nearing completion, and good progress is being made on investigations to plan for the development and settlement of the area, which probably will begin in 1944 or 1945 when water is available for the first blocks of land. Hatcheries have been completed at three stations for the conservation of migratory fish in the Columbia River.

THE CENTRAL VALLEY PROJECT

The Bureau's most complex multiple-purpose project, the Central Valley project in California, to benefit some 2,000,000 acres of land, was more than one-fourth completed at the end of the 1941 fiscal year. By means of Shasta Dam in the north and Friant Dam in the south, regulation of both the Sacramento and the San Joaquin Rivers will provide water to supplement the irrigation supply of a large area of highly improved orchard and farm lands in the southern San Joaquin Valley, reestablish navigation to Red Bluff on the Sacramento River; prevent salt water intrusion in the irrigation channels of the delta of the Sacramento-San Joaquin Rivers; provide supplemental water for irrigation, domestic and industrial uses on the Walnut Creek-Martinez area, south of Suisun Bay; and make possible the generation of hydroelectric power at Shasta Dam and Keswick Dam, a regulating dam also on the Sacramento River.

BOULDER CANYON PROJECT

Boulder Dam, with eight of the large 82,500-kilowatt generators and one of the smaller 40,000-kilowatt generators in operation during the year, generated approximately 3,200,000,000 kilowatt-hours of energy. Collections

RECLAMATION AND IRRIGATION

by the Government from the sale of electric energy totaled more than \$6,000,000, with a maximum of \$767,927 in August, 1940. Two additional 82,500-kilowatt generating units were being installed and one more was on order. The Boulder Canyon Adjustment Act of July 19, 1940, which provided for the adjustment of rates and charges for electrical energy generated at Boulder Dam, was effectuated in May, 1941, with the execution of agency contracts and new contracts with power allottees.

The 80-mile All-American Canal, by far the largest irrigation ditch in the United States, served some lands in the Imperial Irrigation District during the 1941 season. This canal with its 130-mile Coachella Branch, now under construction, will carry Colorado River water to irrigate private and public lands in Imperial and Coachella Valleys in southern California.

THE COLORADO-BIG THOMPSON PROJECT

Good progress was made on Green Mountain Dam and the Continental Divide tunnel, two important construction features of the Colorado-Big Thompson project, designed to provide a supplemental water supply for 615,000 acres of land now under cultivation, situated east of the Rocky Mountains in Colorado. Water collected and stored on the western slope of the mountains in the headwaters of the Colorado River will be transported through the Continental Divide in a 13.1-mile tunnel to the headwaters of the Big Thompson River, a tributary of the South Platte River, where it will be re-stored for release as needed for irrigation.

REPAYMENTS

Under the Reclamation law project water users are required to contract to repay without interest over a period of years the cost of the construction works allocated to irrigation and, in instances where the project is operated by the Bureau, the water users pay annual operation and maintenance

and water rental charges. Construction payments during the year totaled \$2,018,743.99; operation and maintenance collections amounted to \$1,152,559.30; and water rental receipts were \$461,283.89.

OPERATION OF RECLAMATION PROJECTS

Upon completion of a reclamation project the major function of the Bureau of Reclamation becomes one of proper control of the irrigation system, to further the economic well-being of the settlers and to insure reasonable protection of the investment of the United States. On 25 completed projects the operation and maintenance activities are supervised directly by organizations of water users, while on 16 operating projects the Bureau maintains a staff to perform these duties. Funds are advanced by water users on all projects for operation and maintenance by the Bureau.

The population of the 57,441 irrigated farms and the 279 towns and cities served by Federal reclamation projects reached a total of 902,915 at the close of the year. Approximately 100,000 persons were living on 20,000 additional farms which received supplemental water supplies from project works. Hundreds of churches and schools in the project areas reflect the social influence of the transformation of desert wastes into productive self-sustaining communities.

As irrigation works are completed and water becomes available to irrigate public lands on Federal reclamation projects, announcement of the opening of public land is made by the Secretary of the Interior. To insure successful settlement, regulations of the Department require, among other things, that an applicant for a public farm unit must have a cash capital of at least \$2,000, or an equivalent valuation in farm implements, livestock, or other useful assets. The Farm Security Administration, since authorization by the Act of Aug. 7, 1939, has co-operated in connection with the opening of lands for settlement on reclamation projects by furnishing financial

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assistance to worthy applicants who were otherwise qualified under regulations to enter a reclamation farm unit.

PUBLIC LANDS

BY FRED W. JOHNSON

COMMISSIONER OF THE GENERAL LAND OFFICE, DEPARTMENT OF THE INTERIOR

THE GENERAL LAND OFFICE

The General Land Office, United States Department of the Interior, was created in 1812 to take over the work of surveying the public lands and transferring them to private ownership. Since 1812, however, the problems of public lands partly or wholly unsuited to agriculture or better suited to other uses have become increasingly important, and the General Land Office, while continuing the surveying and transfer of land as its basic function, has gradually become an important management agency. In carrying out its management functions it administers the Mineral Leasing Act; it grants rights of way for such public utilities as power and communication lines and oil and gas pipe lines; it manages the Oregon and California revested and reconveyed grant lands; it administers the five-acre tract act; it issues grazing leases on lands under its jurisdiction in the United States and provides for improvement and conservation of the range; it makes all leases of public lands in Alaska for grazing, fur farming, etc.; and it has the responsibility for protecting timber and other resources upon the public lands in Alaska against fire. Approximately 41,247,000 acres of vacant, unreserved, and unappropriated public lands in the United States and 323,000,000 acres in Alaska are under the jurisdiction of the General Land Office.

Total cash receipts of the General Land Office from all sources during the fiscal year amounted to \$7,743,341.93. This was more than three times the amount of the expenditures (\$2,116,078) and made the fifth con-

secutive year in which the receipts were in excess of \$7,000,000.

THE PUBLIC DOMAIN IN RELATION TO NATIONAL DEFENSE

Problems of modern national defense have caused a renewed interest in the remaining unappropriated and unreserved public domain, particularly with regard to the need for new supplies of strategic minerals, power, and grazing facilities, and the military and naval requirements for large areas for aerial bombing ranges, antiaircraft ranges, combat training fields, and artillery practice grounds. Although first consideration is given to the requirements of national defense, at the same time the policy of practical conservation, or planned use of our natural resources for the permanent welfare of the nation, is being carefully and steadfastly developed by the General Land Office.

During the fiscal year ended June 30, 1941, withdrawals of public lands for use in connection with the national defense program aggregated approximately 6,250,000 acres. These withdrawals included 6,209,932 acres for the Army, 4,509 for the Navy, and 6,983 for the Civil Aeronautics Administration.

LAND SURVEYS FOR MILITARY PURPOSES

In many sections of the United States, the only map data available for military purposes are the township plats prepared by the General Land Office showing the boundaries of lands and the general topography made in connection with the public land surveys. In response to requests, surveys and resurveys were made by the Office

PUBLIC LANDS

for the War Department, Navy Department, and the Federal Communications Commission in the interest of direct defense and preparedness, and for other departments and bureaus in the interest of conservation and development of natural resources. During the year the cadastral engineering activities resulted in surveys and resurveys in the field covering 4,851,336 acres of approximately 7,580 square miles.

TIMBER LANDS

Great quantities of Douglas fir and other valuable timber on 2,500,000 acres of revested and reconveyed Oregon and California grant lands in western Oregon, once threatened with wasteful depletion, are now controlled under sound conservation principles whereby a permanent supply of timber is assured. The year was one of continuing progress on problems of readjustments of timber cutting toward the sustained yield capacity of these lands. Care has been taken, however, to cooperate fully with lumber producers who are engaged in filling orders for materials essential to the national defense program.

FIRE CONTROL SERVICE

Fire has long been one of the most destructive enemies of the nation's natural resources. The Alaskan Fire Control Service of the General Land Office is charged with the administration of the forest fire problem on an estimated 250,000,000 acres of public domain timber and grazing lands in Alaska. With a small appropriation of \$27,000 in 1941, the Service has continued a skeleton year-long organization, and every effort commensurate with the limited appropriation has been expended in teaching and practicing the doctrine of fire prevention and fire suppression. Fire prevention technique and the principles of instant suppression have been brought before the public through talks before various local bodies and through the press and radio.

The work of suppressing outcrop coal fires in the vicinity of Gillette, Wyo., was continued throughout the

past fiscal year by a Civilian Conservation Corps camp under the supervision of the General Land Office. These immense coal deposits on the public domain constitute a fuel reserve of untold value, as large scale production could be easily accomplished through strip-mining in the event that production in the eastern fields was impeded.

RELEASE OF RAILROAD GRANT LANDS

Approximately 8,000,000 acres of railroad grant lands in 11 western states have been released by the railroad companies pursuant to the Transportation Act of 1940. The release of these lands to Federal ownership signaled the close of a 90-year era which witnessed the development of the United States westward to the Pacific through railroad construction aided by grants of the then plentiful expanse of public domain.

PUBLIC DOMAIN MINERAL LANDS

New interest in the possibilities of producing strategic and other minerals from public domain lands has arisen because of the requirements of the new methods of national defense. Under the present mineral leasing laws, covering coal, oil and gas, oil shale, potash, sodium, phosphate, and sulphur, substantial known deposits of such minerals on the public lands are still held by the government. Except for 29 permits covering 10,188 acres in Alaska, all lands held under the oil and gas provisions of the leasing act are now embraced in leases. Thirteen oil and gas leases, covering 2,004.74 acres in producing structures, were sold at public auction during the fiscal year in accordance with the policy of the Department to lease government oil and gas lands which are subject to drainage as a result of drilling operations on near by privately owned lands.

GRAZING LEASES

As part of the management program for the lands under its jurisdiction, the

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ORIGINAL ENTRIES AND SELECTIONS

(Fiscal Year Ended June 30, 1941*)

	Public Land		Indian Land	
	Number	Acres	Number	Acres
Homesteads:				
Stockraising.....	17	7,772	—	—
Enlarged.....	21	3,692	—	—
Reclamation.....	106	14,199	18	2,104
Forest.....	4	602	—	—
Section 2289 R. S., et al.....	252	24,267	7	804
Total original homesteads.....	400	50,532	25	2,908
Deserts.....	17	1,721	—	—
State selections.....	7	1,462	—	—
Railroad selections.....	5	16,987	—	—
Timber and stone, mineral applications and adverse claims.....	145	—	—	—
Miscellaneous.....	22	2,003	1	—
Total original entries and selections.....	596	72,795	26	2,908

* An original entry or selection of public land is one made in pursuance of an act of Congress which prescribed the terms and conditions under which patent may be issued or other evidence of title granted.

General Land Office issues grazing leases to stockmen under Section 15 of the Taylor Grazing Act. On June 30, 1941, grazing leases were outstanding on 9,110,974 acres.

APPLICATIONS FOR CAMP SITES AND OTHER PURPOSES

Regulations governing the utiliza-

tion, primarily through lease, of small areas of the public domain, outside certain national reservations, for home-site, cabin, camp, health, convalescent, recreational, or business-site purposes, under the provisions of the five-acre tract act of June 1, 1938, authorized the filing of applications for such sites commencing Aug. 9, 1940.

FINAL ENTRIES OR ENTRIES BASED ON FINAL CERTIFICATES

(Fiscal Year Ended June 30, 1941*)

	Public Land		Indian Land	
	Number	Acres	Number	Acres
Homesteads:				
Stockraising.....	655	330,431	59	16,369
Enlarged.....	53	12,789	130	18,812
Reclamation.....	186	16,886	40	4,618
Forest.....	10	912	—	—
Commuted.....	5	483	25	1,747
Section 2289 R. S., et al.....	283	28,952	27	2,156
Total Final Homesteads.....	1,192	390,453	281	43,702
Desert.....	49	6,867	—	—
Public Auction.....	253	29,848	3	137
Timber and Stone.....	2	279	—	—
Mineral.....	147	10,958	—	—
Miscellaneous.....	243	7,900	37	1,254
Total Final Entries all Classes.....	1,886	446,305	321	45,093

* A final entry of public land is one upon which final certificate has been issued showing that the law has been complied with and that in the absence of irregularity, the entryman or claimant is entitled to a patent. If the requirements of law have been met, the equitable title to the land passes to the claimant upon the issuance of the final certificate.

PUBLIC LANDS
MINERAL LEASES, PERMITS, AND LICENSES
OUTSTANDING JUNE 30, 1941

(by classes)

Class	Leases		Permits		Licenses	
	Number	Acres	Number	Acres	Number	Acres
Oil and Gas.....	1,389	640,093	29	60,188	—	—
O & G Act 8/21/35.....	2,857	3,671,836	—	—	—	—
Coal.....	365	67,448	129	90,287	102	3,749
Potash.....	20	47,092	—	—	—	—
Phosphate.....	6	2,378	—	—	—	—
Sodium.....	3	1,191	89	141,117	—	—
Sulphur.....	—	—	29	18,517	—	—
Total.....	4,640	4,429,948	276	310,109	102	3,749

SUMMARY OF MINERAL LAND WITHDRAWALS AND
CLASSIFICATIONS OUTSTANDING JUNE 30, 1941

(in acres)

Class	Withdrawn	Classified	Total
Coal.....	24,017,364	34,925,945 ^a	58,943,309
Oil.....	4,859,154 ^b	71,884	4,931,038
Oil Shale.....	5,989,949	4,081,208	10,071,157
Phosphate.....	1,889,601	302,219	2,191,820
Potash.....	9,411,906	—	9,411,906
Metallic Minerals.....	8,507	—	8,507
Total.....	46,176,481	39,381,256	85,557,737

^a Includes 5,229 acres of coal land reserved for use of the United States (coal reserves Nos. 1 and 2).

^b Includes 13,578 acres withdrawn as helium reserve.

LEASES OTHER THAN MINERAL OUTSTANDING JUNE 30, 1941

Class	Number	Acres
Term grazing leases under Taylor Grazing Act.....	7,446	9,110,974.52
Grazing leases, Alaska.....	11	1,256,424.93
Fur Farm leases, Alaska.....	26	142,640.00
Aviation leases.....	26	12,815.88
Mineral or Medicinal Spring leases.....	1	40.00
Recreational leases:		
Act of June 14, 1926.....	16	19,639.00
Act of June 30, 1932.....	1	20.00
Boy Scout lease:		
Act of January 21, 1927.....	1	80.00
Bathing Beach lease:		
Act of April 5, 1926.....	1	33.01
Water Well Sec. 40		
Mineral Leasing Act.....	4	160.00
Total.....	7,533	10,542,827.34

Since that date a large number of applications have been received, principally from Arizona, California, Nevada, and Wyoming. All applications received are considered in the light of the effect they may have, if allowed, upon the welfare, not only of the applicants themselves but also of the communities in which the lands applied for are situated.

VIII. PUBLIC RESOURCES AND UTILITIES

CODE OF FEDERAL REGULATIONS

Copy was prepared during the fiscal year for Supplement No. 2 to Title 43 of the Code of Federal Regulations. It includes all regulations contained in the 1939 supplement to Title 43 of the Code, and shows, in addition, all changes which have been made in Chapter I of Title 43 of the Code to and including May 1, 1941.

LANDS PATENTED WITH MINERAL RESERVATIONS

(in acres)

	Patented During the Fiscal Year	Total Patented to the End of the Fiscal Year
Stockraising Act, all minerals reserved...	405,353	33,239,469
Other Acts:		
All minerals reserved	286,046	1,232,099
Coal only reserved...	5,266	10,835,853
Some named min- erals reserved....	22,039	1,845,351
Total.....	718,704	47,152,772

PATENTS ISSUED AND CERTIFICATIONS HAVING THE EFFECT OF PATENTS

(Fiscal Year Ended June 30, 1941*)

	Number	Acres
Homesteads:		
Stockraising.....	816	405,353
Enlarged.....	215	38,907
Reclamation.....	201	18,779
Forest.....	16	1,355
Section 2289 R. S., et al.	343	34,418
Total homestead patents.....	1,591	498,812
Deserts.....	40	5,482
Public Auction.....	135	14,799
Timber and Stone.....	1	39
Mineral.....	118	7,205
Special Acts.....	147	299,138
Miscellaneous.....	772	31,365
Total patents all classes.....	2,804	856,840
Certified to States.....	—	182,480
Total patents and Certifications...	2,804	1,039,320

* Where upon final examination it is found that an entry or selection is in proper form and that the law has been complied with, a patent conveying the legal title to the claimant is issued. In the case of indemnity state selections, the legal title is conveyed upon approval thereof by the Secretary of the Interior and certification by the Commissioner of the General Land Office.

PUBLIC UTILITIES

By JOHN BAUER

DIRECTOR, AMERICAN PUBLIC UTILITIES BUREAU

GENERAL

This survey will cover the war developments and their effect upon public utilities, especially electric power. It will present the effects of the war on electric power needs, the plans to supply expanding demands, the trends of public power, and the readjustments under the 1935 Holding Company Act as administered by the Securities and Exchange Commission.

The immediate consequence of national defense and war industry has been sharp increase in electric utilization. This started in 1939, proceeded in 1940, and jumped in 1941. The figures of total electric generation for

general public supply have been as follows:¹

	Kilowatt Hours	Annual Increase
1938.....	116,681,000,000	—
1939.....	130,336,000,000	13,655,000,000 ¹
1940.....	144,985,000,000	14,649,000,000
1941 (esti- mated)...	167,500,000,000	22,515,000,000

The 1939 step-up over 1938 was about 11.7%; 1940 over 1939, 11.3%. For the first two months of 1941 the

¹ All figures of power capacity and production are taken from reports of the Federal Power Commission.

PUBLIC UTILITIES

increases over 1940 were respectively 12.5% and 11.3%; then there was a jump to 16.4% in March, subsequently continued higher, and will probably average for the year about 15.5% over 1940, or approximately 22,500,000,000 kilowatt hours. With the full entry into the war, the 1942 requirements will come close to 200,000,000,000 kilowatt hours, and then lots more.

POWER SHORTAGES

With the rapid increase in power requirements, shortages in generating capacity have already appeared in sections of the country where defense activities have been concentrated. They have been due primarily to low steam plant construction by private utility companies during the depression.

During the decade 1920 to 1930, total steam plant capacity increased from 8,443,000 kilowatts to 22,322,000, and then during the next decade reached an aggregate of only 25,551,000 in 1940. The increase in the 1920's was nearly 165%, and less than 15% in the 1930's. The corresponding generation was 22,622,000,000 kilowatt hours in 1920, 57,237,000,000 in 1930, and 88,861,000,000 in 1940; the increases were 162% and 55%. The discrepancy between additional capacity and generation during 1940-41 appears in the respective increases; 15% compared with 55%.

The discontinuance, or great slowing down, of steam plant construction during the depression is, of course, understandable. Naturally, new plant enlargements would not be undertaken in the absence of dependable power demands. What happened, however, was sudden expansion when the war started in 1939 so that the demands rapidly overtook capacity, and the prospects now are for more and more necessary power to bring up national production to the needs of the country and its allies.

The shortages in 1941 were accentuated by extensive drouths which prevailed throughout the eastern United States, and were particularly severe in the TVA territory and in the south Atlantic states. For a time rationing of power for civilian purposes became

necessary in some sections to keep up defense production. This experience has brought up sharply before the country the fact that supplementary steam power must be provided wherever hydro projects have been extensively developed. Any region which normally has come to rely primarily or heavily upon hydro power must have available also steam power to aid in carrying the loads during periods of low water fall. This important lesson had to be learned, and it will be embodied in the plans for future power supplies to meet not only war needs but also the post war requirements, to enable the country to shift promptly to civilian life and to continue high production for national welfare, especially for the purpose of facing the uncertain international competition for world markets. Success for both the war and the peace will depend basically upon adequate and economical power supplies. To keep the kilowatts working effectively is the prime essential to war and peace production.

IMMEDIATE POWER SUPPLIES

The 1941 power shortages have been met so far without development of emergency conditions or restriction upon war output. In part, they have been supplied by bringing into regular use old plant units which had been kept for reserve or standbys.

Most companies had considerable old or obsolete equipment which was brought into regular operation during the year and will be continued until adequate modern plant capacities can be provided. The old units can be operated mostly as efficiently as ever, but they are much less economical than modern plants. Their operation is expensive and should not be continued longer than necessary.

Besides the use of standby plant, there has been rapid step-up in new plant construction. Thus, total national capacity advanced from 37,134,000 kilowatts at the close of 1937 to 41,637,000 in 1940, and mounted to 42,649,000 by July 31, 1941; about 2,000,000 kilowatts of additions were reported as scheduled for the second

VIII. PUBLIC RESOURCES AND UTILITIES

half of 1941. Private steam capacity advanced from 23,088,000 kilowatts in 1937 to 25,551,000 in 1940; Federal hydro lifted from 970,000 to 2,042,000. The large Federal projects are being expedited and enlarged as much as possible, and are furnishing huge power supplies where they are particularly needed. This applies especially to TVA and to the Pacific states where industrial production must be enlarged fast for action against Japan. Fortunately, Bonneville and Grand Coulee have immediately huge supplies that make possible the meeting of all production needs.

NEW PROGRAM OF CONSTRUCTION

As the mounting power requirements of war production became evident, along with the fact that shortages had developed and were impending, the Federal Power Commission made a country-wide survey to determine power needs for the prospective duration of extraordinary defense production. Regional conferences were held with utility representatives, public officials, and industrialists for the purpose of estimating what the power requirements will be with the expanding defense efforts, and what new plant provisions must be made to meet the growing demands.

Under date of July 16, 1941, the Commission made a report to the President and outlined its program of providing new electric plant capacity to become available during the years 1943-1946. To become operative, the plan will require legislative action. If not adopted fully, it will doubtless form the chief content of special legislation for adequate power supplies. It is predicated upon an annual defense expenditure of \$36,000,000,000. This will doubtless be exceeded with the full participation in the war.

For the purpose of the program the Commission divided the country into eight principal regions:

Region I—Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut, New York, eastern Pennsylvania, New Jersey, Delaware,

the major portion of Maryland, and the District of Columbia.

Region II—Western Pennsylvania, northwestern Maryland, West Virginia, Ohio, Michigan, and the major parts of Indiana, Kentucky, and southwestern Virginia.

Region III—Eastern and northern Virginia, North Carolina, South Carolina, Georgia, Florida, Alabama, Tennessee, and eastern Mississippi.

Region IV—Wisconsin, Illinois, Iowa, northeastern Missouri, the major portion of Minnesota, and small portions of northeastern Nebraska, eastern South Dakota, and northern Indiana.

Region V—Louisiana, Arkansas, Oklahoma, Texas, New Mexico, and western Mississippi.

Region VI—North Dakota, South Dakota, western Minnesota, eastern Montana, Wyoming, Colorado, Kansas, southwestern Missouri, and a small portion of Iowa, and the major portion of Nebraska.

Region VII—Washington, Oregon, Idaho, Utah, and the major portion of Montana.

Region VIII—Includes Nevada, California, and Arizona.

The report presented for each region specifically the new plant installations and the year when it should be completed to meet the power needs. The tabulation next page is a kilowatt summary by region of the new steam installations, the new hydro, and the total new capacity to become available during the years 1943-1946 inclusive.

The new steam capacity would be owned and operated by the private companies (in few instances by municipal plants). The hydro would be furnished entirely by the Federal Government through such agencies as may be designated by Congress. The program total of 13,805,500 kilowatts is a large one, but it is likely to be increased further as a consequence of the full activities. The significance of the proposed additions appears in the fact that the new steam plant of 8,675,000 kilowatts will be over 30% of the total 1940 private utility steam installation; the new hydro of 5,130,-

PUBLIC UTILITIES

	Steam	Hydro	Steam and Hydro
Region I.....	2,500,000	1,222,000	3,722,000
Region II.....	2,300,000	573,000	2,783,000
Region III.....	1,075,000	1,279,000	2,354,000
Region IV.....	1,805,000	15,000	1,820,000
Region V.....	365,000	431,000	796,000
Region VI.....	95,000	.....	95,000
Region VII.....	325,000	990,000	1,315,000
Region VIII.....	210,000	620,500	830,500
	8,675,000	5,130,500	13,805,500

500 kilowatts will be 255% of the total 1940 governmental hydro installation. The total new constitutes 33% of the aggregate 1940 plant capacity.

Regarding the new steam capacity, the plan contemplates that the government would finance the construction of the generator units, and that the companies would pay for all additional steam station facilities. The Federal funds would be advanced by the Reconstruction Finance Corporation, and were estimated not to exceed \$150,000,000 to \$200,000,000 a year, but these amounts include also the hydro generator units. The private utility investment would average \$75,000,000 to \$100,000,000 a year. The additional cost of hydro for dams, reservoirs, power houses, etc. (exclusive of generators) would average about \$170,000,000 a year, of which over a third would be allocable to non-power purposes. Presumably the period of these expenditures covers 1942-1946 inclusive, but this is not certain.

So far as practicable, the generator units would be standardized and timed so as to meet the scheduled needs. Priorities would be obtained, and costs would be kept to a minimum by planned and coordinated production and construction procedure. The steam plants would be owned and operated by the private companies, and the hydro by the government.

ISSUES RAISED BY CONSTRUCTION PLANS

The program as outlined appears to fit reasonably prospective conditions. The additional plant capacities will probably be needed in the several re-

gions substantially as presented. There is, however, an important issue as to national policy regarding the ownership and operation of the plants constructed primarily through Federal financing.

That Federal funds must be provided not only for hydro but also for new steam capacities there is little doubt. But if the government furnishes the bulk of the money for the new steam plants, the question has been raised whether it should not directly own and operate the plants and assure the delivery of power at cost to the war industries, whether it would not be a grave national mistake to turn the new plants completely over to private ownership and operation.

This question pertains both to immediate expediency for expeditions and economical construction and to ultimate policy of Federal power. As to immediate expediency, there is, first, considerable probability that specific agreements can not be made promptly with the large number of individual companies included in the program; so there will be delays. Second, the plant units or new plants as set out in the program, or as obtainable by agreement, will not be as large and economical as they would be if planned exclusively for national purposes, regardless of individual company interests. Third, standardization, timing, and construction procedure will be less subject to control, so that costs will be substantially greater than would be required for exclusive Federal construction.

A fourth point involves the terms under which the loans would be extended and the conditions under which the plants would enter into

VIII. PUBLIC RESOURCES AND UTILITIES

private operation and the fixing of rates. The interest requirements of the government would naturally be low, probably 2% or at most 2.5%. The companies, however, would expect to include the full costs in their general plant accounts and obtain returns according to the standards which control in the rate making processes of the state commissions, paying (say) 2.5% and getting 6% or more. They would not furnish power at the low cost made available by Federal financing; and all other costs would be higher than under complete government construction and operation.

These issues would, of course, be avoided if the government proceeded directly to provide new power plant capacities according to war needs. Survey of the specific plant additions presented in the report indicates that much larger and more central and economical plants could be provided at minimum cost of construction and operation. The government would avoid delays in coming to agreements; it could build definitely according to program. And when power has been provided at low cost, the government could actually supply the power to industry at cost without a step-up in charges due to entrenched rate practices.

When the program reaches Congress, the issues involving public and private ownership and operation will doubtless be raised and discussed. President Roosevelt himself has already been reported as stating, with reference to a special project, that "a publicly financed plant can not at any time in the future be transferred to private ownership."

A further question has been raised as to the post-war consequences of the great power enlargements when war production subsides. Whether the new facilities are owned and operated directly by the government or by the private companies, they will be much more economical than the bulk of the existing steam power, and so will render useless a large proportion of present capacities. The question of

fairness to the companies is thus inevitably raised.

The answer, however, appears in the statement of the situation itself. To a great extent the existing steam plant is obsolete or obsolescent. Rapid advances in power plant technology have taken place during the 1930's, while mostly the present steam plant units were installed prior to 1930, much prior to 1925 or 1920. All this means that heavy obsolescence has taken place for which inadequate depreciation provisions have been made by the companies. The new construction, therefore, will be justified, not only to meet the extraordinary war requirements, but to furnish operating replacements of depreciated plant facilities. This point requires clear factual consideration when in the discussion of the proposed program claims are made that the new construction would confiscate or impair existing private utility investment.

FEDERAL POWER POLICY

Apart from the immediate issues raised by the proposed private ownership and operation of the large government-financed steam construction, there is also a question which involves fundamental or ultimate national power policy. The government already has large hydro plants, will rapidly add great additions, and must furnish supplementary steam power, also interconnecting transmission lines. It is thus launched upon a huge power system directly owned and operated. So the question arises, why it should not include also the new steam power which must be provided to meet governmental needs, and which will be largely planned, directed, and financed by the government?

While the government's general function in providing electricity for industrial purposes and national welfare may be debatable, the fact is that the beginnings of a Federal power system go back many years, and quite rapid advances were made during the past decade. The government not only has huge hydro projects in several sections of the country, but has reached the stage of policy

PUBLIC UTILITIES

where practically all future hydro projects will come within its exclusive domain. It is thus already firmly committed to a national electric system, and the extension will be greatly accelerated by the war. The new hydro plants will inevitably be added to the Federal projects, and the position of public power will be greatly advanced regardless of what may be decided with respect to the necessary new steam power.

The advance in the position of public power is well indicated by its ratio of generation. The aggregate public production in 1920 was only 4% of the total for the country. In 1930 it was slightly over 5%, but in 1940 it advanced to 12%. Total generation for 1940 was 144,985,000,000 kilowatt hours; private 127,642,000,000 and public 17,342,000,000. These public figures include not only the Federal projects, but also state, municipal, and other public groups. The 1941 ratio will probably step up substantially over 1940.

The rapid advance in public generation has been due principally to the Federal Government and public power districts. Thus municipally generated power amounted to 5,270,000,000 kilowatt hours in 1937, and advanced to 6,188,000,000 in 1940. During the same period, however, Federal and power district generation increased from 2,706,000,000 to 9,759,000,000. Of these totals, hydro amounted to 2,703,000,000 in 1937 and 8,747,000,000 in 1940; but there was the striking advance from mere 94,000 kilowatt hours steam generation in 1937 to 862,000,000 in 1940.

If these trends are taken together with the imminent expansion in Federal hydro developments and co-ordinated steam power, the prospect seems clear not only for a rapidly increasing proportion of public power generation, but the establishment of a comprehensive Federal power program and responsibility. The large Federal projects have brought about in their areas distinctly low rates compared with other sections of the country. They have thus produced an advantage for industrial progress in

some sections, and, conversely, have created discrimination against the others.

Since electric power has become increasingly basic to industrial production, accentuated for war purposes, cheap power is essential in all parts of the country. In as much as the government has already provided cheap power in some areas, it has virtually an obligation to do likewise for other territories, and so remove their competitive disadvantages. This factor, taken together with the war pressures for more and more power, will hasten the development of a comprehensive and countrywide Federal power policy, with the responsibility to assure low cost power to all regions. These are matters of national interest which will be raised and considered in the adoption of a program of electric plant expansion.

SHIFT IN SEC OBJECTIVE

The developments and trends with respect to public power have had repercussions upon the private power systems, including their rate policies, their relations to the state commissions, and particularly to the efforts of the Securities and Exchange Commission to administer the terms of the 1935 Holding Company Act. During the past year, SEC has made its principal advance in carrying out the purposes of that act, especially with respect to the requirements of corporate simplification and territorial integration.

The purpose of the act was largely to undo the corporate and territorial distortions that had been produced by the far-flung holding company systems created during the 1920's. In most instances there were several successions of holding companies, and the properties were scattered widely over the country in separated and often small operating units, so that effective economy of operation was precluded. The act sought, first, to reduce the corporate complexities and to limit the series of holding companies to two successions; second, it required that each system as reconstituted must be

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limited to operation within an integrated territory. While these general requirements involve basic constitutional questions, to date they have not been directly challenged in the courts, and appear to be accepted by the private systems.

During the past year SEC has applied increasing pressure to bring about the contemplated system re-adjustments. It has revealed, however, a distinct shift in apparent objective and method in carrying out the requirements of the act. At the outset it appeared to seek a re-grouping of the property units through inter-system exchanges or sales, so that finally each would emerge with an integrated service territory. Its objective was not to break up the systems into their constituent operating units, but to re-assemble them so that each system would have a continuous territory for its operation, with a maximum of two holding company successions.

As the efforts to administer the act proceeded, experience showed that territorial re-groupings would be difficult to bring about on a reasonable basis of corporate and capital structures, and an altogether different method of compliance with the act has been applied. This started, apparently, when the Indianapolis Power and Light Co.'s common stock was sold early in 1940 by Utilities Power and Light to the general investing public, including local institutions and individuals in Indianapolis. When this sale was effected the local company

was freed from SEC jurisdiction, and became exclusively an intrastate and independent operating company. This disposition did not produce better territorial integration, but it escaped non-compliance with the act.

Following this disposition of the Indianapolis Power and Light Company, the method of stock sale, or divestment of control by holding companies over local properties, has been applied in a considerable number of instances, and it appears to furnish a practical course through which violation of the act can be avoided. If this method is generally pursued, it will bring back substantially to each state the full control of the local properties. Super Federal regulation will disappear. At the same time, effective integration for state welfare will not be achieved. The actual service territories will remain divided as they have been, and there will be no gain in proper integration and coordination in the interest of the state at large. The problem of bringing about the effective coordination of power facilities will be left for future development of state and local policies.

This situation, as it has emerged, will naturally be affected by the Federal power policies and program. Since the Federal system and responsibility appear to be extending, they may affect also state and municipal policies in bringing about public power organization. These are, at any rate, trends of probabilities that are indicated by recent events and by the sharp impacts of the war.

STREET AND HIGHWAY TRAFFIC

BY ERNEST P. GOODRICH
CONSULTING ENGINEER, NEW YORK

GENERAL

It was estimated that a total of 33,675,000 passenger and motor trucks were registered for the year 1941, 28,850,000 being passenger cars.

The National Safety Council reported a 6 per cent increase in high-

way traffic fatalities with an estimated economic loss of \$1,600,000,000. Out of 1,200,000 injury cases, 100,000 persons suffered permanent disability. A sharp increase was shown in the death rate for school children.

Accident fatalities on trunkline

STREET AND HIGHWAY TRAFFIC

roads were less than on county roads, because of better planning. More pedestrians, poor lighting, and narrow roads account for the county road fatalities. However, the number of accidents between two automobiles is higher on the trunkline road.

Seventy-five feet for two lane-roads and 200 feet for four-lane, varying slightly with congested areas, were found to be required for right-of-way.

SIGNS, SIGNALS, MARKINGS

A prominent traffic engineer reported that, due to the fast rate of speed and impossibility to see signs because of roadside objects, a motorist must have easier identifications of highway routes. Yellow or white striping and marking of pavement were used so as not to be confused with the local and rural routes. When these routes melt or overlap, large figures and arrows can be used for direction. The difficulty arises when winter snows cover the markings. Some states have placed markings at intersections, and the result was satisfactory for some and not for others. The conclusion was reached that the center line should be used to divide the traffic moving in opposite directions. The state departments should take care of the expense involved. By proper identification and improvements on highways, traffic and motorists will be greatly benefited.

When the center lines lost their visibility within a few days, the Nevada State Highway Department made an investigation. It was found that common every-day dirt and oil caused this dullness. A machine to clean the surface of all abrasive material was devised and is used with much success.

In order to increase night visibility of traffic lanes, the California Division of Highways applied tiny glass beads to the lacquer line. These beads reflect the headlight beams and return the color of the painted line without any glaring sparkle. They were found very effective on concrete pavements because of the low visibility of traffic lines after a short period of wear.

More attention was given to highway markings, symbols and labeling than before. By widening horizontal strokes and lengthening the vertical ones the driver gets a normal vision of the symbol. Luminous headed reflectors, pavement markings, and guide lines were improved as to color and durability. If they become standardized, the motorists will be able to recognize these markings everywhere.

A new fluorescent-neon signal light for stop-and-go signals was developed which gives brighter light with the absence of phantom lights. All colors give brilliant lights even in sunlight, because a 50 per cent clear glass lens is used.

Discarded automobile tires were used in Galveston, Tex. to outline proposed channelization islands. An asphalt base aluminum paint was applied, which appears white at night and has a high visibility during the day.

Because of national defense, aluminum and magnesium became difficult to obtain, and a substitute for them in traffic signals will have to be found if the supply is completely cut off. Traffic control is vital to the army when traveling, so that a careful study was made taking into account the effectiveness of the signal in operation.

STREET LIGHTING

A survey of the street lighting systems in 142 cities throughout the United States, revealed that these systems are inadequate. However, a number of cities have already installed modern street lighting systems which have decreased the number of night traffic accidents.

Luminous sodium safety lights were selected by the City of Lackawanna, N.Y. Set 250 feet apart, the forty-two 10,000 lumen lamps and airplane shaped reflectors were to be installed. This system was also adopted by many other cities. The largest installation in the world was on the Belt Parkway, from Owl's Head Park in Brooklyn, to Bronx Whitestone Bridge in Queens.

Pendant luminaires were installed

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along Western Avenue Boulevard in the Chicago Park District.

Differences in cost were due to variations in street lighting rates and to difference in the quantity of lighting provided. The Illuminating Engineering Society Recommended Practice of Street Lighting disclosed that at least 120,000 lumen per mile of street is necessary for visibility. Cities having a high density of population, resulting in more traffic on streets, will require more light per mile of street.

The American Road Builders Association contends that 1,800 feet of visibility distance is necessary for safe driving in daylight at modern fast speeds. Only an effective street lighting system can produce such a visibility distance at night. This system should take into account wet roads, imperfect brakes, and poor driver reaction time. An adequate street lighting system should make a pedestrian or other hazard visible at 1,200 feet.

The G.E. Street Lighting Evaluator was tested. It determines obstacle and pavement brightness, and allows the mapping of visibility values at certain points along a street besides determining the minimum and average values.

A modern lighting system was installed in the Pennsylvania Turnpike tunnels taking into consideration its curves and straight runs. Ceiling lights were installed because they threw light on the rear of vehicles.

It was stated that headlights do not give enough illumination to afford sufficient visibility in darkness. Travelling at 50 miles per hour an automobile can not be stopped within the distance one can see.

SAFETY MEASURES

Due to the great expense involved in grade separations, work was delayed, even though it is one of the best solutions in separating the conflicting streams of traffic.

In Toledo, Ohio, "school route" maps were provided for school children to help them get to school by the safest route.

Kansas City again won the Grand Award in the National Safety Contest.

Not only did citizens obey the rules because they are fair and just, but also for fear of arrest. Such influences as police courtesy, safety reminders through newspapers, and broadcasts caused the citizens to be careful. To the various truck drivers, safety meant a more permanent position.

The City Council of Portland, Ore., established a Safety Committee in March 1940 which cooperates with schools and other agencies in child safety education. Policemen were added to the force and given detailed traffic training. A street lighting program installed 1,700 additional lights without additional cost to the city. Further studies were made with reference to lighting for other thoroughfares. New signals were placed in the central business district. To protect pedestrians at night an overhead sign and a floodlight was installed with the word "X-Walk" in zeon (Claude Tubing) 10 inches high on each side and placed over the painted crosswalk. The sign flashes to attract attention.

PARKING METERS

A study was made for metering parking lots at the Larchmont (N.Y.) railroad station and the parking area in the unincorporated section of the adjoining town of Mamaroneck. Thirty per cent of the cars parked at the Larchmont plaza were owned by residents and 62 per cent by non-residents. Larchmont residents owned three per cent of the cars in the other area. It was suggested that a daily parking fee could be charged for non-residents who would use a special area.

Syracuse, N.Y., installed 1,090 parking meters in July in the downtown area. A fee of one penny for 45 minutes of parking is charged. The limit of 45 minutes to each car is upheld. It has been found that each meter parks 400 cars a month, and its receipts have been very encouraging.

Because Minneapolis installed 1,100 automatic meters, double parking has been eliminated and congestion reduced to a minimum.

The International City Managers

STREET AND HIGHWAY TRAFFIC

Association reported a 72 per cent increase in the use of parking meters since Jan. 1, 1940. Two hundred and fifty-one municipalities use meters to regulate parking in congested areas as compared to 146 in January of that year. Fourteen cities have meters which take only pennies and in 75 cities take both pennies and nickels.

A feature of a new parking meter is a two-inch red column which makes it easy for the automobile driver and police officer to see illegal parking.

Minneapolis installed 1,050 parking meters in April 1940 and expects to install an additional 400 on the principal parking streets in the central business district. A five-cent fee permits one hour parking at 75 per cent of the streets and 30 minutes parking on two major ones. Enforcement is by three squad cars with civilian drivers and police officers in each, circulating through the metered streets. Additional enforcement was needed on adjacent streets because of heavy parking.

Passaic, N.J. was the first city in the East to install parking meters. The installation of 1,109 meters since 1937 has eased traffic, aided flow, and made motor shopping easier. Complaints from bus companies about double parking has ceased. The successive installations were made at the merchants' requests.

SPEED

A Welsbach speed analyst recently introduced enables an officer to count the number of cars passing a given location and also spot every car exceeding the speed limit. An inconspicuously placed portable lamp signals the officer when a speeding car is approaching.

EDUCATION

A prominent magazine advised that the public should be sold on traffic engineering by publicizing facts in understandable diagrams and wording, using the newspapers, radio, billboards, trolley and bus posters. Local advertising men should be induced to create new ideas. Work should be

undertaken in cooperation with service and safety clubs.

PEDESTRIANS

About 70 per cent of the fatal accidents which occur in city streets involve pedestrians. Their acts contribute nearly 61 per cent of the total and nearly 75 per cent of the non-fatal pedestrian accidents. To reduce this percentage, pedestrians should be compelled to observe traffic regulations, using force if necessary. Long intervals between light changes cause pedestrians to become impatient and also encourage motorists to cheat on the lights. Short intervals encourage both to wait until lights are in their favor. An amber light between the red and green permits the pedestrian who is halfway across the street to finish his crossing in safety.

Los Angeles doubled its motorcycle force, subjecting the new members to rigorous tests. Traffic fatalities decreased during the year. Pedestrian fatalities dropped four per cent and all deaths went down nearly one per cent. Increased enforcement, and cooperation from courts and city attorney deputies contributed to this reduction.

BICYCLES

Bicycle accidents are higher on county roads due to greater distances from schools, shopping centers, and especially because of the poor road pavement and narrow shoulders. On those roads, lack of warning or improper location of signals, narrow roads, trees, poles, and mailboxes close to the road, and poor lighting, all contribute to colliding with fixed objects.

The National Safety Council published a pamphlet entitled "Bicycle Safety." It was estimated that over 8,000,000 bicycles were in use in the United States or approximately one bicycle to every four automobiles, or one to every 17 persons. Three out of four riders injured in bicycle-motor vehicle collisions were violating some traffic law while motorists were guilty in approximately 25 per cent of the collisions. A two-hundred-mile bi-

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cycle trail was developed near Indianapolis, Ind. Bicycle paths and trails can easily be established where there are systems of parkways. It was also felt that a bicycle registration fee not to exceed 50 cents should be set. This would aid in reducing thefts and increase the percentage of stolen bicycles recovered.

TRAFFIC REGULATION

In West Palm Beach, Fla., when a motorist violates the parking meter fee, he is brought to headquarters and pays his fine or fee of five cents. This revenue helps pay the expense of safety signs, traffic lights, and salaries.

PARKING

California, Iowa, Kansas, Maine, New Hampshire and North Carolina enacted statutes giving municipalities authority to acquire and operate automobile parking lots. The Federal Defense Highway Act of 1941 provided the use of Federal road funds for acquisition of off-street parking facilities.

Off-street facilities are necessary and can be self liquidating projects if handled as a direct municipal operation, as a municipally subsidized operation or wholly financed by private capital. They may be financed by Federal funds as self liquidating projects. Private capital should be encouraged to invest its money. A service fee is charged for using such facilities, and revenues in excess of the cost of operation and supervision are allocated directly to traffic improvements.

Under a 1941 State Enabling Act property owners in Kansas City, Kan., will pay 90 per cent of improvement costs of municipal parking lots and the city will pay the remaining 10 per cent. Six off-street parking lots will be located near the business district.

Our transportation facilities can not be fully appreciated when parking causes traffic congestion such as has been a trial to both business men and motorist in many cities. Decentralization, ruination of main business centers, and poorly situated, sometimes

temporary, parking lots are some results of the traffic problem. Only through thorough investigation and a detailed study of facts can a plan be arranged to include efficiency, permanency, convenience, and accessibility to the affected areas. With the help of the government, cities could purchase land and lease it to an entrepreneur, adopt uniform regulations, eliminate curb parking where possible, and designate parking lots on minor streets near enough to the central area.

In solving the parking problem the rapid decrease in property values of blighted areas in central business districts must be included. Due to various curb and corner restrictions, parking space has decreased even though cars have increased in number. The three types of parking are: brief stopper who loads or unloads merchandise, short-term parker who stays for an hour or less, and the long time parker who is usually employed in the district.

In order to avoid decentralization of the business sections, Kalamazoo opened shoppers parking lots situated about 700 feet from the main corner, and the stores on the east side of the street are about 132 feet away. The City Commission prepared a list of regulations for the lot. Expenses are paid by taxes and fees collected. Plenty of parking lots in and around the central area for the shoppers' and merchants' benefit is the goal for which they are striving.

The Regional Plan Association of New York found that the business man is the most frequent long-time parker and the most vocal objector to parking congestion.

Montclair's (N.J.) problem was insufficient parking space. Its shopping centers closely bordered residential areas and created problems relating to blight and obsolescence of abutting residence property through unsightliness and reduced values. The Town Planning Board and Town Commission established free municipal parking lots near the central business sections and planned to do the same for neighborhood shopping centers. Park-

PERIODICAL PUBLICATIONS

ing lots were located behind stores in the business sections, and it is hoped that all-day parkers will use them and remove the long term parker from all street and residential areas where they create traffic hazards. The municipal parking lots are to be financed from parking meter revenues.

PARKING LOTS

Even though municipally owned parking lots are not considered important to most cities, there are some which are using city-owned land for parking space to accommodate the increasing number of their citizen motorists. A small fee is charged to help for its maintenance.

The Illinois Municipal League drafted a bill for the purchase or lease of land to establish parking lots by municipalities. They will have the authority to make changes and pay any bond issues required out of the revenues received. Parking meters in Decatur earned \$30,000 a year, and it is hoped that this, combined with the revenue from parking lots, will eliminate practically all of the blighted area surrounding the immediate business center.

According to detailed studies and investigations conducted by the AAA committee on Parking and Terminal Facilities, parking meters should be installed only where there is sufficient space without interfering with moving traffic, loading space, and bus stops. A reasonable fee for their use will also be a means of collecting revenue.

NATIONAL DEFENSE

After a study, the Institute of Traffic Engineers felt that each state, county, and city should cooperate to relieve traffic congestion and speed up the defense program. The following matters were outlined: (1) routes for defense workers and trucks to be planned; (2) employment hours in defense areas to be staggered to reduce peak hour congestion; and (3) traffic bottlenecks were to be eliminated.

National defense created major traffic problems all over the country. Grade separations, traffic signals, special left-turn lanes, and many new roadways will be required. Housing accommodations which must be made for defense workers also demand facilities for traffic movement and storage space for cars while men and women are at work. It was expected that 1941 travel will show an increase of 15 per cent.

The increase in men quartered at Fort Diel, Okla. created a traffic problem. Standard road signs at the fort, the marking of through streets, installation of parking lots, laying of sidewalks, arranging bus stop regulations, etc., were planned. An accident location map was made to enable authorities to offer better protection and control at danger spots.

Due to the increased number of men quartered at Fort Sill Military Reservation in Oklahoma, plans were made to regulate the traffic flow, by having parking lots, road warning, and such things for better protection.

PERIODICAL PUBLICATIONS

Bus Transportation

330 West 42nd Street, New York City.

Economic Geology

University of Illinois, Urbana, Ill.

Electrical Communication

67 Broad Street, New York City.

Electrical World

330 West 42nd Street, New York City.

Gas Age-Record

9 East 38th Street, New York City.

Journal of the American Water Works Association

22 East 40th Street, New York City.

Journal of Geology

5750 Ellis Ave., Chicago.

National Engineer

176 W. Adams Street, Chicago.

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Public Service Magazine

1012 Pioneer Bldg., St. Paul, Minn.

Public Utilities Fortnightly

1038 Munsey Bldg., Washington, D.C.

Public Works

310 East 45th Street, New York City.

Sewage Works Journal

654 Madison Ave., New York City.

Transit Journal

330 West 42nd Street, New York City.

Water Works and Sewerage

155 East 44th Street, New York City.

COGNATE SOCIETIES AND RESEARCH INSTITUTIONS

(For further information, the reader may address the following organizations)

AMERICAN PLANNING AND CIVIL ASSOCIATION, 901 Union Trust Bldg., Washington, D.C.

AMERICAN PUBLIC UTILITIES BUREAU, 280 Broadway, New York City.

AMERICAN TRANSIT ASSOCIATION, 292 Madison Ave., New York City.

AMERICAN WATER WORKS ASSN., 22 E. 40th St., New York City.

EDISON ELECTRIC INSTITUTE, 420 Lex-

ington Ave., New York City.

INTERNATIONAL ASSN. OF FIRE CHIEFS, Police Headquarters, Philadelphia.

NATIONAL PARKS ASSN., 1512 H St., N.W., Washington, D.C.

PARK ASSN. OF NEW YORK CITY, INC., 295 Madison Ave., New York City.

PUBLIC SERVICE COMMISSION, State Division, 80 Centre St., New York City.

DIVISION IX

DEFENSE AND ARMAMENT

THE UNITED STATES ARMY

By ROBERT S. THOMAS

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GENERAL DEFENSE DEVELOPMENTS

The year 1941 was marked by many rapid changes within the United States Army, changes made necessary by the growth in strength from approximately 174,000 men, scattered over 130 posts, camps, and stations on July 1, 1939, to slightly over 1,600,000 men, distributed within and beyond the continental limits of the United States, in the late months of 1941.

This expansion brought tremendous responsibilities with it. Adequate shelter had to be provided, often in the face of extremely adverse weather conditions; hospital facilities must be afforded; and training areas, suitably located, had to be established. This latter task presented two types of difficulties—either the local communities were actively opposed to the establishment of contiguous camps, or business and political delegations were too strongly in favor of other locations. Along with provision of the material needs of receiving and training troops went the necessity of providing recreational and spiritual welfare facilities.

By operation of the Selective Training and Service Act of 1940, thousands of men poured into the Army throughout 1941. Training these men required rapid expansion of all Regular Army activities and creation of new processes. Twenty-nine large reception centers were located throughout the United States. Here, selectees were classified, uniformed, and dis-

tributed among 21 replacement training centers for their basic training, which extended for a period of 13 weeks, whereupon recruits were assigned to tactical units.

The ground forces thus assembled in Continental United States provided four armies of nine army corps and 29 divisions, along with an Armored Force of four divisions, plus troops of the Hawaiian and the Philippine Divisions. The supplemental Air Force completing this military set-up was first composed of 54 combat groups, later expanded in October, 1941 to 84 combat groups.

Use of the triangular division, as discussed in 1940, was continued, and, as need arose, new units were formed or existing ones were considerably expanded. These included armored divisions, parachute troops, ski troops, antitank units, antiaircraft units, mountain troops, motorized units, and numerous service maintenance units.

This expanded army had to be fitted to fight any place on the globe, for, unlike any given European country, our possible theater of war defies definition or delimitation. Our troops must be fit and ready, if need arises, to fight in the tropics or in barren Arctic wastes.

ARMY ORGANIZATION

The War Department, functioning as the managing agency of the Army, was presided over during the past year by Secretary of War Henry L. Stimson. Assisting him in accomplishing the current national defense program

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were Under Secretary of War Robert P. Patterson, Assistant Secretary of War John J. McCloy, and Assistant Secretary of War for Air Robert A. Lovett. Increased demands upon the Secretary necessitated expansion of his immediate office force. Notable among those so placed on duty were: Julius H. Amberg and Harvey H. Bundy as Special Assistants; William H. Hasties, Civilian Aide; and the following Expert Consultants—Benedict Crowell, Elmer J. Bryant, Lawrence A. Appley, and Stacy May.

The Secretary of War was further assisted by General George C. Marshall, Chief of Staff. Under this combined directive, the General Staff and the various branches of the service operate. The advice and best judgment of the Chiefs of the arms and services reach the Secretary of War through the Chief of Staff and the Deputy Chiefs of Staff (Major General William Bryden, Lieutenant General Henry H. Arnold, and Major General Richard C. Moore). General Headquarters of the field forces, established to direct and supervise training of troops, was commanded by Lieutenant General Leslie J. McNair.

The heads of the major subdivisions of the General Staff are: G-1 (Personnel), Brigadier General W. H. Haislip; G-2 (Military Intelligence), Brigadier General Sherman Miles; G-3 (Operations and Training), Brigadier General Harry L. Twaddle; G-4 (Supply and Equipment), Brigadier General Brehon B. Somerall; War Plans Division, Brigadier General Leonard T. Gerow.

Flexibility in command and control is assured by the practice of dividing the United States and its possessions into Corps Areas and Departments, each in turn commanded by a general officer. First Corps Area (Major General Francis Willby) headquarters, Boston; Second Corps Area (Major General Irving J. Phillipson) headquarters, Governors Island, New York; Third Corps Area (Major General Henry C. Pratt) headquarters, Baltimore; Fourth Corps Area (Major General John P. Smith) head-

quarters, Atlanta; Fifth Corps Area (Lieutenant General Daniel Van Voorhis) headquarters, Columbus, Ohio; Sixth Corps Area (Major General Joseph M. Cummins) headquarters, Chicago; Seventh Corps Area (Brigadier General Fred E. Uhl) headquarters, Omaha; Eighth Corps Area (Major General Richard Donovan) headquarters, San Antonio, Texas; Ninth Corps Area (Major General Jay L. Benedict) headquarters, San Francisco; Hawaiian Department (Lieutenant General Walter C. Short; relieved by Lieutenant General Delos C. Emmons) headquarters, Fort Shafter, T. H.; Philippine Department (General Douglas MacArthur) headquarters, Manila; Caribbean Defense Command, including Panama Canal Department (Lieutenant General Frank M. Andrews), headquarters, Quarry Heights, Canal Zone; Puerto Rican Department (Major General James L. Collins) headquarters, San Juan, Puerto Rico. These areas and departments are further subdivided into tactical divisions and brigades.

Under the Four Army Plan, operative in 1941, the largest groupings of armed forces are provided, administered by the following Army Headquarters: First, Governors Island, New York; Lieutenant General Hugh A. Drum; Second, Memphis, Tennessee; Lieutenant General Ben Lear; Third, San Antonio, Texas; Lieutenant General Walter Kreuger; and Fourth, Presidio of San Francisco, Lieutenant General John L. DeWitt.

The Chiefs of the several arms, services, and departments are: Major General Emory S. Adams, Adjutant General's Department; Major General Virgil L. Peterson, Inspector General's Department; Major General Allen W. Gullion (succeeded by Major General Myron C. Cramer), Judge Advocate General's Department; Major General Edmund B. Gregory, Quartermaster Corps; Major General James C. Magee, Medical Department; Major General Howard K. Loughry, Finance Department; Major General Eugene Reybold, Corps of Engineers; Major General Charles M.

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Wesson, Ordnance Department; Major General Dawson Olmstead, Signal Corps; Major General William N. Porter, Chemical Warfare Service; Major General John K. Herr, Cavalry; Major General Robert M. Danford, Field Artillery; Major General Joseph A. Green, Coast Artillery Corps; Major General Courtney H. Hodges, Infantry; Air Corps, Lieutenant General Henry H. Arnold; and Combat Command, Lieutenant General Delos C. Emmons.

ARMY STRENGTH

On June 30, 1941, strength of the Army of the United States, commissioned and enlisted, was slightly in excess of 1,250,000 men. This personnel was supplemented by Regular Army Nurses, Reserve Nurses, Contract Surgeons, and Cadets at the United State Military Academy. This total is in sharp contrast with figures for the preceding year, when aggregate strength was less than 300,000.

During the past year a new grade, Chief Warrant Officer, was provided by legislation to afford much-needed advancement to this class of personnel.

SELECTIVE SERVICE ACT

The original provision of this act which limited service of a selectee to a period of 12 consecutive months was set aside on Aug. 18, 1941 by the narrow margin of one vote in the House of Representatives. As the act has come more widely into operation, some of its features have undergone practical modification; men more than 28 years of age are being winnowed out; some uniformity in handling married selectees is being achieved; and emphasis is being placed on training the younger men who come within the purview of the law, since they give greatest promise of becoming excellent soldiers.

On Dec. 11, 1941, by Congressional action, all restrictions against American troops serving outside the continental limits of the United States were removed from the act. On Dec. 12, 1941, registration of all males between the ages of 18 and 64 was pro-

vided, with a definite indication that those falling within the brackets 19 to 45 would be assigned to military duty first.

FIELD ARTILLERY

This combat arm completed separate battalion organization for the normal Infantry Division. Antitank batteries, antiaircraft and antitank platoons, and service and ammunition batteries were added to the new tables of organization. New Corps Artillery weapons, including a new howitzer and a new gun, were tested and standardized. Procurement of 105-mm. howitzers was initiated to replace the 75-mm. gun in divisional light artillery regiments. Tests were made of a new 155-mm. howitzer and a 4.5-inch gun, mounted on identical carriages, favored because they present little, if any, production difficulties. Different types of airplanes were tested for artillery observation purposes. A request was initiated for procurement of 13 autogiros, provided with jump take-off feature, and for the organization of a test squadron to work with these machines.

At the beginning of 1941, the Field Artillery School could accommodate a peak load of only 236 officers and 340 enlisted men; by March, provision was made for 750 officers and 1,050 enlisted men.

Three field artillery replacement training centers were organized and began training selectees in March. These were located at Fort Bragg, North Carolina, Fort Sill, Oklahoma, and Camp Roberts, California, with capacities of 16,500, 8,000, and 6,000 respectively.

SIGNAL CORPS

The Chief Signal Officer was given two missions in connection with his assignment in relation to national defense: first, to coordinate the communications in the Army; second, to decrease the number of different types of radio sets in use in the Army. Accordingly, a Coordination and Equipment Division was set up in the Signal Corps, and an Advisory Board was formed, composed of prominent men

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from civilian life, all serving without remuneration: Dr. Frank B. Jewett, chairman of Bell Laboratories and president of the National Academy of Sciences; Dr. W. R. G. Baker, vice-president, General Electric Co.; Dr. William P. Hilliard, vice-president, Bendix Radio Corporation; Walter Evans, manager, Radio Division, Westinghouse Electric Co.; J. B. Coleman, chief engineer, RCA Manufacturing Co.; Dr. L. M. Hull, president, Aircraft Radio Corporation; Brigadier General William I. Westervelt, associated with Sears, Roebuck Co.; L. C. F. Horle, on board of directors, Institute of Radio Engineers; and Major E. H. Armstrong, inventor of the superheterodyne receiving system and of the frequency modulation transmitting and receiving system.

Parallel with this group was set up an Advisory Council composed of Reserve Officers prominent in communications activities: Col. David Sarnoff, president, Radio Corporation of America; Col. C. O. Bickelhaupt, assistant vice-president, American Telephone and Telegraph Co.; Lt. Col. Leon E. Rudd, superintendent, Western Union Telegraph Co.; Lt. Col. F. W. Wosencroft, RCA Communications; Lt. Col. Edwin L. White, engineer with Federal Communications Commission; Lt. Col. William C. Henry, president, Northern Ohio Telephone Co.; Lt. Col. E. R. Shute, vice-president, Western Union Telegraph Co.; Lt. Col. Darryl F. Zanuck, chairman of Research Council, Academy of Motion Picture Arts and Sciences; Major Clinton B. Allsop, vice-president, Postal Telephone and Telegraph Co.; Major David W. Magowan, vice-president, Western Newspaper Union.

Strength of the Corps in December, 1941 was 3,800 officers and 40,275 enlisted men, a sharp contrast with 1917 when the Corps numbered 55 officers and 1,570 enlisted men.

The Signal Corps Laboratories, Fort Monmouth, New Jersey, conducts all Signal Corps development work. It is divided into the following sections: Administrative, Product Engineering, Specification and Record, Inspection

Engineering, Procurement, Supply, Shop, Field Radio, Vehicular Radio, Radio Direction Finding, Wire, Sound and Light, Meteorological, Thermionic (high frequency work), Radio Position Finding.

The Aircraft Radio Laboratory, Wright Field, houses officers, radio engineers, physicists, mechanics, machinists, and draftsmen who have developed and improved applications of radio to military aircraft.

There was maintained in 1941 a complete net of 146 fixed radio stations through which corps area and department commanders communicate with Army posts in their areas. From approximately 50,000 licensed amateur radio operators, about 1,200 were organized on a volunteer basis into corps area, state, and regional nets in the Army Amateur Radio System.

Units established in the Corps during 1941 were: Production Expediting Section, July 27; Signal Corps Procurement District moved from New York to Philadelphia, Oct. 11; Wright Field Signal Corps Procurement District, Oct. 15.

Telephone systems increased about 60% in the year. Administrative radio stations have increased approximately 120 to 130, and airways communications stations increased 90 to 120 stations.

CORPS OF ENGINEERS

On July 1, 1940, before expansion had begun, this Corps numbered 800 officers and 5,500 enlisted men. On Dec. 1, 1941, it included 4,700 officers and 76,000 enlisted men, an expansion of nearly 1,300 per cent, or nearly twice that of the Army as a whole. Construction work reached an all-time high, with over \$1,600,000,000 appropriated for that purpose. Under Public Act 326 of the 77th Congress, the Corps of Engineers took over duties of the Construction Division, Quartermaster Corps, involving land acquisition, operation of utilities, and construction of cantonments, shell-loading plants, powder factories, rifle plants, and scores of other projects. The ad-

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dition of the \$2,500,000,000 program from the Quartermaster Corps raised the Engineers' construction responsibility to over \$4,000,000,000. For the Air Corps, 125 projects were instituted at a cost of over \$600,000,000. Approximately \$50,000,000 is being spent on construction of seacoast fortifications; four new aircraft assembly plants were started, cost \$70,000,000; and river, harbor, and flood control appropriations topped \$600,000,000.

Two Engineers Replacement Centers, one at Fort Belvoir, Virginia and one at Fort Leonard Wood, Missouri have trained selectees at the rate of 36,000 a year. These centers had complete facilities—rifle, machine gun, and antiaircraft ranges, as well as training areas for fixed and floating bridges, demolitions, and fortifications instruction.

Many new-type troop units were activated, including the Engineer Water Supply Battalion, Aviation Battalion, and Engineer Railway Operating Battalion.

CAVALRY

A Cavalry Replacement Training Center was opened at Fort Riley, Kansas March 15, 1941, capacity, 6,160. Cavalry maneuvers were held in Washington, Texas, Louisiana, Arkansas, and the Carolinas. The 2d Cavalry Division was brought nearly to completion, and cadres were trained and furnished for all new cavalry units formed. Tests of new equipment were carried on, and the latest types of equipment were issued to all Cavalry units. A new $\frac{1}{4}$ -ton reconnaissance truck replaced all motor tricycles and motorcycles with side cars; the Special Weapons Troop, Cavalry Regiment, Horse was converted into a motorized troop, and in it the $\frac{1}{4}$ -ton reconnaissance truck replaced 143 riding and 40 pack horses, while the 37-mm. antitank gun replaced the caliber .50 machine gun; a new carbine replaced most of the caliber .45 automatic pistols and the Thompson machine gun; and a new lightweight radio and a pack radio were tested.

INFANTRY

This arm made striking progress in diverse lines. Of prime importance was the establishment of Infantry Replacement Centers set up at Camp Wheeler, Macon, Georgia; Camp Croft, Spartanburg, South Carolina; Camp Walters, Mineral Wells, Texas; and Camp Roberts, San Miguel, California. Opening in March with approximately 33,500 trainees, they reached their total capacity in June of 58,000 trainees every 15 weeks. A fifth center, Camp Crowder, Neosho, Missouri, was started and will be ready to receive trainees in 1942. At these centers, trainees were divided into battalions, of which there were five types, fitting the selectee finally for service in the following kinds of companies: rifle, heavy weapons, antitank, service, or headquarters. The number of active Infantry units grew in the past year to the point where there were 99 rifle regiments serving in nine Regular Army and 18 National Guard Infantry divisions. Three of these regiments were grouped in the 4th Division, a completely motorized unit, while five regiments were incorporated in the five armored divisions. In two types of organizations the Infantry took to the air—Parachute Infantry and Airborne Infantry. The 501st Parachute Battalion, organized in 1940, was followed by the 502d in July, 1941, the 503d in September, and the 504th in November. On Oct. 10, 1941, the 88th Infantry Airborne Battalion was formed at Fort Benning, Georgia, equipped with motorcycles, reconnaissance cars, and folding bicycles. This unit, initially at a strength of 500, will be trained to be transported in airplanes and landed on the battleground from planes. Other Infantry units organized during the year were five antitank battalions and cadres for seven military police battalions and 17 military police companies.

Infantry arms and equipment showed excellent progress. Light machine guns, the Browning automatic rifle, and 60-mm. mortars were, for the first time, provided in sufficient quantities for training purposes. In-

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creased production was also effected for 81-mm. mortars and for caliber .50 machine guns. After successful tests, a light rifle or carbine was developed to replace pistols in the Infantry regiment. This weapon was especially designed for the use of communications personnel, ammunition carriers, and administrative overhead, where a light, easily handled weapon would be more effective than a pistol when personnel was subject to air or ground attack.

Unsatisfactory helmets, relic of the first World War, are being replaced by a new type of helmet and liner which provides more protection to the wearer as well as greater comfort in the wearing.

A new field telephone was perfected. Operating without a battery, it is actuated by the power of the sound impulses of the person talking. A new field radio for use in the division, regiment, and battalion went into mass production to provide direct communication with supporting arms. A midget radio transmitter was standardized for parachute troops and anti-tank units. It is to be tested for its applicability to communications work in the Infantry battalion.

The year also witnessed development, production, and installation of an antiaircraft pedestal mount for motor vehicles. It will carry heavy or light machine guns, the Browning automatic rifle, or the caliber .50 machine gun.

Perhaps the greatest single advance in equipment was the famous $\frac{1}{4}$ -ton, four-wheel drive truck, christened variously as the "peep," "bantam," "jeep," or "blitz-buggy." Developed for Infantry, it has been adopted by all arms and services, by the Marines, and by some foreign countries. Designed as a substitute for the motorcycle, it has proved itself a command and reconnaissance vehicle without equal.

COAST ARTILLERY CORPS

Expansion in this Corps brought about the activation and organization of many new units; these included 16 antiaircraft regiments, 10 antiaircraft

separate battalions, and three regiments of mobile seacoast artillery. All Coast Artillery National Guard units received training during the year. Antiaircraft artillery training was concentrated in eight large training centers, three of which had extensive land areas for target practice firing. In other areas, target firing was conducted over water areas. Basic and specialist training courses were given in three large Coast Artillery replacement training centers, and a barrage balloon training center was established in North Carolina.

Coast Artillery equipment was greatly improved. An American version of the Swedish 40-mm. Bofors antiaircraft gun was standardized, and an effective fire control system for automatic weapons was adopted. Development was begun of a self-propelled mount for antiaircraft automatic weapons designed for use with mechanized units. To substitute for wire communications, a medium-range radio set was developed, as was also a short-range set for use with searchlight batteries. A new trailer was developed to transport searchlights and power plants.

The increased effectiveness of air power has a direct bearing on the design and emplacement of permanent seacoast defenses. The backbone of harbor defense is the 16-inch gun battery, designed to outrange and outthit the most powerful enemy battleship afloat. Necessarily, these 16-inch guns are fixed in position, and their size precludes effective concealment, so that the ideal sought in emplacement is primarily bombproof construction. Present plans contemplate modernization of all harbor defenses, including doubling the number of 12-inch or heavier caliber guns, with a suitable complement of new type 6-inch guns. The execution of this program involves expenditure of huge sums of money, plus coordinated work by five branches of the Army—the Coast Artillery Corps to serve the guns; the Corps of Engineers to build the emplacements and, where possible, camouflage them; the Ordnance Department to provide guns, ammuni-

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tion, and target position finding equipment; the Signal Corps to install means of communication; and the Chemical Warfare Service to furnish equipment for protection against chemical attacks.

On Oct. 1, 1941, the Coast Artillery Corps comprised 34 harbor defense regiments, two railway artillery regiments, 12 semimobile antiaircraft regiments, 13 separate antiaircraft battalions, 11 155-mm. gun regiments, 39 mobile antiaircraft regiments, and many submarine mine and barrage balloon units.

CHEMICAL WARFARE SERVICE

This Service is charged with research in the development of chemical warfare, procurement and supply of chemical warfare materiel, training in offensive and defensive procedure, and the organization and operation of special gas troops. Materiels released on the battlefield by gas troops have three objectives: (1) production of physiological effects on enemy personnel, (2) generation of dense volumes of smoke for screening operations, and (3) production of destructive fires by release of incendiaries.

As a result of this Service's experimentation, the Army of the United States is equipped with the finest gas masks in the world for military purposes.

In 1941, manufacturing facilities at Edgewood Arsenal were expanded; a new chemical warfare arsenal was begun near Huntsville, Alabama; and another plant, designed for manufacture and assembly of magnesium and thermite incendiary bombs, was started near Pine Bluff, Arkansas.

ARMY AIR FORCE COMBAT COMMAND

At present, our Air Forces are only surpassed in size by our oldest fighting force, the Infantry. This development, attained in 1941, is a far cry from our one airplane, with its handful of daredevil volunteers, in 1909. In those days, our Army flying arm was comprehended in the Aviation Section of the Signal Corps. Now the

aviation component of our Army is the Army Air Forces, composed of two branches, the Combat Command and the Air Corps.

Formerly known as the G.H.Q. Air Force, the Combat Command is the striking arm of our air power. Its basic organization for continental defense is centered in four Air Forces—1st at Mitchel Field, Long Island, New York; 2d at Geiger Field, Spokane, Washington; 3d at MacDill Field, Tampa, Florida; and 4th at March Field, Riverside, California. Each of these Forces has many operating bases within its area, and, because of increased speed and range of modern planes, each Force is in position to support any other within a few hours. For each Air Force there are three major elements—the Interceptor Command, Bombardment Command, and Support Command. The first is to intercept and fight enemy bombing and fighting planes; the second for the destruction of hostile objectives; and the third to provide effective and close support to the Army's ground units.

AIR CORPS

This component is charged with procurement of personnel, matériel, and operation of the entire Air training program. In this Corps, the Materiel Division is responsible for development of the best aircraft and equipment that can be devised. This important unit had its genesis in an engineering laboratory set up at McCook Field, Dayton, Ohio, in 1917, and in 1926 made a permanent organization at Wright Field. Since that time it has figured in every important aircraft development. At this field now are headquarters for the Maintenance Command which controls the operation of 11 Air Corps Depots, and the Transport Service, the largest matériel transport service in the world.

The Training and Operations Division trains aviation cadets (which term includes pilots, bombardiers, and navigators) in three training centers—Southeast Training Center, Maxwell Field, Alabama; Gulf Coast

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Training Center, Randolph Field, Texas; and West Coast Training Center, Moffett Field, California. These centers supervise 41 civilian schools giving elementary training; 15 military flying schools and three civilian schools giving basic training; and 21 advanced military flight training schools, seven of which are single-engine schools and the remainder, multi-engine schools. In addition to these are three flexible gunnery military schools, one civil navigation school, three replacement training centers, three military navigation schools, and six bombardier schools.

Under the Air Corps come also the Technical Training Command (three replacement training centers, 14 civilian contract mechanics schools, and five Air Corps technical schools); the Ferrying Command, charged with flying Lease-Lend equipment from factories to stations from whence they are delivered to various countries; and the Building and Grounds Division, concerned with establishment of new fields and erection and upkeep of facilities at all fields. Exclusive of civilian flying school fields, the Air Corps operates 248 fields in continental United States, including 34 combat command stations, 48 flying and technical schools, 11 depots, and 155 miscellaneous installations.

The Air Corps Materiel Division, in response to the demand for new equipment for defense, spent approximately \$6,000,000,000 in 1941. With this money, aircraft and major items necessary to their operation were purchased—power plants, fuel, instruments, spare parts, flying clothing, etc. Provision of manufacturing facilities included some 165 plants, shops, and mills. At Wright Field a wind tunnel was completed affording a wind velocity for testing purposes of 400 miles per hour. This tunnel permits testing of models with wing spans up to 17 feet. Here also was built a new dynamometer laboratory with the greatest horsepower capacity and highest altitude characteristics of any known in the world. Engines up to 8,000 horsepower may be tested up to simulated altitudes of 20,000 feet,

and 4,000 horsepower engines up to 35,000 feet.

The exhaust-driven supercharger, designed to maintain sea level pressure at carburetors of aircraft flying at high altitudes, was brought to peak development and met with unqualified success when demonstrated under actual combat conditions in British planes.

The past year saw completion and successful flight testing of the largest bombardment plane in the world, the XB-19, the culmination of 3½ years of planning and engineering by the Materiel Division of the Air Corps and the Douglas Aircraft Co.

Other material developments of the past year were production in vastly increased quantities of the Air Corps Flying Fortress bombers; installation in all bombers of remote fire control systems and power-operated turrets around .50-caliber machine guns; modernizing of aircraft by installation of leakproof tanks and superior armor plate; development of superior night photography methods; and design and development of barrage balloons for defense of vital areas.

QUARTERMASTER CORPS

This Corps expanded its functions of furnishing food, clothing, shelter, and transportation to the Army. At Quartermaster Replacement Training Centers at Camp Lee, Virginia and Fort Francis E. Warren, Wyoming, there were trained 13,295 selectees for assignment in headquarters of the Four Armies. For clothing and equipment, \$729,432,275 was appropriated, supplemented by additional sums late in the year. Special articles of apparel were developed for parachute troops and for troops in tropical and in cold climates. Thousands of tons of critical and strategical materials were saved through development of substitutes for aluminum, zinc, rubber, etc. To buy the Army's daily food (cost \$750.-000), 30 marketing centers were established throughout the country, thus splitting up purchases and preventing one depot bidding against another. In food improvements may be noted the use of boneless beef and more dehy-

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drated foods. Special rations were developed for parachute and mobile troops, and canned field rations furnish complete meals to troops in the field.

Forty-one new cantonment-type laundries were placed in operation, and five more are under construction in the United States, while 14 are being built at outlying bases. Mobile laundries, sterilization, and bath units carry these essential facilities right up to the field of operations. One hundred repair shops were established to mend shoes, clothing, and equipage.

A building program involving 459 projects (over \$2,000,000,000) was carried on in continental United States, Alaska, Panama, and Hawaii to house 1,500,000 men. In addition, there were built ordnance manufacturing plants, chemical warfare plants, general hospitals, air fields and stations. More than 7,000,000 acres of land were purchased, and nearly 2,000,000 acres were leased. In December, construction assignments were transferred from the Quartermaster Corps to the Corps of Engineers.

The Quartermaster Corps owned or chartered 87 water transport vessels, an increase over last year of 18, and cargo handled jumped from 631,000 to 1,222,600 measurement tons. Small vessels, tugs, barges, rescue boats, and launches increased in number from 500 to 830.

For transportation, commercial facilities were used to a large extent; freight volume increased from 4,000 to 28,839 carloads, and 1,139,199 men were moved, an annual increase of 943,546. New heavy equipment bought included 322 tank cars, 66 locomotives, two autorailers, and 39 cranes. Tens of thousands of general purpose motor vehicles, including passenger cars, trucks, and motorcycles, were purchased. Motor supply depots were established at Fort Wayne, Camp Holabird, Little Rock, Stockton, Schenectady, Fort Crook, Atlanta, and San Antonio. The Corps now has 35 heavy maintenance companies, 12 depot companies, 99 light maintenance companies, and 246 truck companies. More than 15,000,000 square feet of

warehouse space has been purchased or is under construction, and new Quartermaster Depots are being established at Alexandria, Charlotte, Fort Crook, Fort Worth, Jersey City, Kansas City, Little Rock, and Fort Wayne.

Over \$2,000,000 was spent for development of new National Cemeteries. A new Golden Gate National Cemetery was opened, and the Baltimore National Cemetery was dedicated on Memorial Day.

There were 24,043 horses and 4,096 mules purchased, 11 times the normal peacetime procurement. The number of stallions available for stud duty increased from 710 to 725, and annual foal production is estimated to be 10,350. New Quartermaster Remount troops were organized at Fort Robinson, Nebraska and Fort Reno, Oklahoma.

ORDNANCE DEPARTMENT

This Department is charged with furnishing the Army with efficient weapons. This material, some 1,200 items, includes rifles, pistols, machine guns (for troops, tanks, and airplanes), trench mortars, hand grenades, antiaircraft guns, cannon, bombs, ammunition, tanks, armored cars, scout cars, instruments for controlling and directing the fire of weapons, and pyrotechnics for signaling purposes. In the past there was never maintained a munitions industry adequate for defense needs, either under private or government ownership. To minimize this difficulty, the Ordnance Department has for years forwarded the designing of critical, hard-to-produce Ordnance items, thus familiarizing industry with Ordnance manufacture through a program of educational orders. Coincidentally, Ordnance arsenals were maintained as manufacturing units and as experimental laboratories. This policy now pays dividends, since the Ordnance Department stands six months ahead of its first World War record of production on a comparable basis.

Ordnance appropriations made up to Nov. 1, 1941, totaled \$3,181,500,000; in addition, Lease-Lend and new

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facility appropriations total over \$2,755,000,000—in 1940, the total appropriation was \$130,000,000. These huge sums are being used to produce armament of advanced design and effective performance. A discussion of types follows:

Rifles.—The new standard semi-automatic rifle, having three times the power of the well-known Springfield, is being turned out in satisfactory quantities.

Tanks.—Medium and light tanks, capable of holding their own in speed, armor, and armament with any made, are coming from the assembly lines. Medium tanks are now being manufactured by six commercial concerns, and two more factories will soon be added to this work. After tests are complete on a pilot model, heavy tanks will go into quantity production. Corps and army maneuvers showed the value of the medium tank and have increased Army demands for this type of weapon.

Machine Guns.—These are being produced in nine commercial plants and one government arsenal. They will be used in aircraft, in tanks, by ground troops, and for antiaircraft and antitank fire.

Artillery.—These pieces range in size from 75-mm. pack howitzers to the largest mobile artillery piece, the 24-mm. howitzer. Divisional artillery includes the 75-mm. pack howitzer, 75-mm. gun, and 105-mm. howitzer. The latter named is used for plunging fire, utilizing a heavy projectile with great destructive effect. Corps weapons include 155-mm. guns and 155-mm. howitzers. The latest types now in production are 4.5" guns, suitable for antitank work, and a new long-range 155-mm. howitzer. Our Ordnance Department was first in the world in manufacturing self-propelled artillery. Working with the automotive industry, we are mounting all sizes of artillery from the 37-mm. gun up to the 155-mm. on self-propelled mounts. In antiaircraft artillery we have the 3" antiaircraft gun and the longer range 90-mm. gun. For protection of troops against low-flying aircraft are the .50-caliber antiaircraft machine gun,

and 37-mm. antiaircraft gun, and the 40-mm. Bofors.

ORDNANCE PROCUREMENT

Powder output has risen 1,000% in the past year, and small arms ammunition production has increased 1,200%.

The Ordnance Department operates experimental laboratories in each of its six manufacturing arsenals, and research conducted is so planned as not to overlap civilian efforts.

Procurement of ordnance materials is decentralized to 13 Ordnance Districts, at present using 555 officers and 11,276 employees. Many new plants have been built to produce what the Ordnance Department needs, and ten new storage depots were added to the eleven already existing in scattered locations in the United States.

ORDNANCE GROUND AND AIR SERVICE

Ordnance ground forces include the Division Ordnance Section of the triangular Infantry division; the Corps Ordnance Battalion; Army Ordnance units; and Armored Force Ordnance units. Ordnance air service forces include the Aviation Ordnance Company and the Air-Base Ordnance Company. Provided for duty in all posts in the United States are station complements, which do not leave their respective posts.

SURGEON GENERAL'S OFFICE

Necessity of occupying distant outposts in the interests of national security has brought new problems to the Medical Department. Tropical diseases, rare in the United States or wholly unknown, must be studied—oryza fever, Japanese river fever, "Q" disease, leprosy cholera, yaws pinta, bejel as examples. A tiny mosquito, living in air plants in high branches of Trinidad's giant immortelle trees, was spotted as a transmitter of malaria. Under senior medical officers, civilian crews are working in 11 states and in Puerto Rico to stamp out malaria, cost of the project, \$1,500,000. Another special medical board is studying means of controlling influenza and other epidemic diseases.

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Our expanded army has made necessary provision of 90,000 hospital beds in approximately 226 station and 15 general hospitals, 10 of the latter being recently constructed. This is an expansion of over 350%. A unique acquisition of the year was a hospital at Danville, Kentucky for the care of neuropsychiatric cases.

Dental facilities were expanded to provide clinical care for each station harboring 10,000 troops. Some 48 buildings, with modern dental equipment, were built for this purpose in the various cantonments.

The Veterinary has had placed on it the task of keeping healthy approximately 50,000 horses and mules, in addition to inspecting all meat and dairy products for our vastly expanded army.

ACHIEVEMENTS OF THE MEDICAL CORPS

Some of the more outstanding achievements of the Medical Corps for the year were: the greatest peacetime production of typhoid fever vaccine in the history of the Army, the equivalent of 8,500 gallons, a saving to the Government of \$1,540,000 over the cost of purchase; enlargement of the program to guard against tetanus by immunizing all soldiers with tetanus antitoxin; mass immunization of all our troops against yellow fever; development of sulfanilamide and its derivatives so that each soldier can carry tablets of this drug to secure immediate protection from acute infection which often follows a wound; the perfection of mobile surgical operating rooms of the trailer type, along with construction of a thoroughly modern, scientifically planned hospital unit car to afford medical care and surgical treatment; the development of a new mobile X-ray unit that can be packed and unpacked in 15 minutes and can produce radiographs in 30 minutes and, with its fluoroscopic equipment, a foreign body in a wounded soldier can be located in a minute after his body is placed under the machine; the designing of a new Army Mobile Medical Laboratory for service at the battle

front; construction of a new field disinfectory; and the equipping of parachute battalions with necessary material to set up an aid station wherever they may land from the sky.

An all-time low death rate for the Army was established in 1941, and, although influenza was prevalent in the United States, it claimed only one death per 250,000 men in the Army. In 1917, out of 100,000 men, there were 171 Army deaths from pneumonia; in 1941, this dropped to only eight per 100,000.

THE FINANCE DEPARTMENT

This Agency pays the War Department's personnel and bills, makes collections due, and audits property accounts. The Chief of Finance, as War Department Budget Officer, is charged with preparing and submitting to the Bureau of the Budget all estimates of funds for the several branches and services required for inclusion in the annual War Department appropriations made by Congress. The total number of vouchers paid by the Finance Department in the fiscal year 1941 was 4,620,042, representing an aggregate disbursement of \$4,261,642,667.53, which amount includes expenditures in connection with the Civilian Conservation Corps. There were 4,541,008 commercial invoices handled. Most of these indicated a discount period through which means \$8,259,051.44 was earned. Since July 1, 1919, the Finance Department has saved the Government \$21,990,789.75 by taking advantage of discounts offered. During 1941, the Finance Department attained a mark of 99.86% of possible discounts enjoyed to the profit of the Government.

All items of property purchased for the military establishment from moneys appropriated by Congress for the support of the Army as an agency of national defense are audited by the Finance Department. This includes all supplies and equipment procured and accounted for by the Regular Army, R.O.T.C., Organized Reserves, C.M.T.C., and National Guard, as well as Ordnance equipment loaned to civilian rifle clubs under supervi-

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sion of the Director of Civilian Marksmanship, and Ordnance and other equipment loaned to other executive departments of the government for the protection of life and property. In addition to the above, personnel of the Finance Department is charged, under the direction of the corps area commander, with the audit of all accounts carrying the property belonging to the Civilian Conservation Corps under the custody of the War Department, which is kept separate and distinct from Army property. In the hands of Army agencies at present, excluding the value of grounds and buildings, there are several billion dollars worth of property. The accountability of this property is divided among 4,986 accounts which are audited at least once annually.

SOLDIER AND OTHER DEPOSITS

On June 30, 1941, there were approximately 23,294 active soldiers' deposit accounts, and the amount deposited during the fiscal year totaled \$1,800,454.14. The amount of interest paid by the government on these deposits during the fiscal year 1941 was \$76,688.90. From June 30, 1873, to June 30, 1941, the sum of \$83,686,114.72 has been deposited through this Army channel, and it has earned \$4,205,394.85 in interest for its depositors. The Act of June 28, 1937, authorized enrollees of the Civilian Conservation Corps to make deposits of pay, in amounts specified by the Director, with the Chief of Finance, to be repaid at once in case of an emergency or upon completion of or release from enrollment, and to receive the balance of their pay in cash monthly. Deposits made by enrollees, to and including June 30, 1941, amounted to \$16,264,996.47. When this Corps was established in 1933, the Finance Department was assigned the duty of paying it. The average number of members paid monthly since April, 1933, was 306,364; the average number of allottees paid monthly since April, 1933, was 283,822; the total amount paid allottees during the period April, 1933, to June 30, 1941, was \$731,655,

995.99. During this period, 41,421,003 Civilian Conservation Corps checks were drawn. Total disbursements pertaining to the Civilian Conservation Corps for the past fiscal year amounted to \$255,464,446.13.

INSPECTOR GENERAL'S DEPARTMENT

This Department, originating in General Washington's Army in December, 1777, had its establishment confirmed by Act of Congress of March 3, 1813. Its present duties are to inquire into and report upon all matters which affect the efficiency and economy of the Army of the United States and to make such investigations, inspections, and reports as may be required of it. The Reorganization Act of 1920 prescribed personnel of this Department as one Major General and 61 other officers; in 1941, there was a strength of one Major General, two Brigadier Generals, 125 Regular Army officers, 60 Reserve officers, and 40 National Guard officers, to say nothing of the numbers assigned to the air forces or the various overseas departments.

To meet the increased burden of work in 1941, the office was organized as follows: (1) Executive Division to prepare, enunciate, and put into effect all governing policies, including all matters connected with procurement, detail, and assignment of the Department's commissioned personnel. This division also coordinates and supervises work of all other divisions of the office and reviews all cases presented before their submission to The Inspector General. (2) Inspection Division to contact and inspect headquarters of field armies, army corps, corps areas, units of G.H.Q., army and corps troops, National Guard and Regular Army divisions of all types, all posts, stations, depots, ports of embarkation, cantonments, tent camps, air corps establishments, general hospitals, reception centers, replacement training centers, and recreational areas. From Oct. 1, 1940, to Oct. 1, 1941, a total of 1,130 inspections were made (882 annual and 248 special). (3) National Guard

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Inspection Division which completed close to 4,000 inspections. (4) Procurement and Construction Inspection Division to cover construction activities in the current military program. In the procurement field, inspections covered organization, methods, efficiency of inspecting delivered material, status of delivery, and administration of cost-plus-a-fixed-fee contracts. In the military construction field, inspections covered engineering and auditing. This Division made approximately 500 separate inspections in 1941. (5) An Investigations Division received 455 cases in the year, 170 of which were reports of investigations reviewed in the Washington office; the remaining 276 were cases referred for opinion and recommendation. (6) Money Accounts and Miscellaneous Division reviewed 1,099 reports of money accounts, extending from Washington, D. C. to reports sent in by corps area, departmental, and division inspectors general.

JUDGE ADVOCATE GENERAL'S DEPARTMENT

Personnel.—On Jan. 1, 1941, this Department consisted of 103 Regular Army officers and 98 Reserve officers; on Dec. 1, there were on duty in it 110 Regular officers, 245 Reserve officers, and four Retired officers.

The Judge Advocate General is the principal law officer of the Army. His office in Washington is divided into sections, each specializing in particular parts of the work of answering thousands of legal questions arising annually in the administration of the Army and of the War Department.

Military Affairs Section handles matters relating to Army organization and military personnel, such as those legal questions concerning procurement of personnel, appointments, enlistments, selective service inductions, promotions, discharges, retirements, rights, privileges, line of duty, and discipline, and analogous matters pertaining to civilian employees of the War Department, and those involving the preparation of drafts of proposed military laws as well as the interpre-

tation of existing laws. The output of this Section doubled in the past year.

Military Justice Section inaugurated two policies, believed to have added greatly to the fair and impartial administration of military justice. The first was designed to bring about a greater uniformity of sentences in similar cases; the second was designed to bring about the retention in the service of offenders against the Articles of War whose offenses were not such as to render them unfit to remain in association with other soldiers.

It was noted that, even with the tremendous increase in the size of the Army, the ratio of general court-martial cases dropped materially, the average number of trials by such courts now being approximately four per 1,000 enlisted men. During the time begun Jan. 1, 1941, and ended Dec. 1, 1941, the Boards of Review went over 699 records of trial by general court-martial, and 2,824 general court-martial records were examined by the Military Justice Section.

Contracts Section.—During the year there was a marked increase in the number and complexity of problems presented to the Contracts Section. It disposed of more than 1,000 cases by formal opinion and rendered many informal opinions to the procurement branches of the War Department. Officers of this Section were also assigned to the offices of the heads of procurement arms and services to advise on legal matters not requiring formal opinions from The Judge Advocate General.

Bond Subsection handled more than 44,000 surety and other bonds.

Claims and Litigation Section was responsible for questions relating to claims by and against the Government, except patent litigation.

Military Reservations Section handles legal questions pertaining to the acquisition, title, use, possession, and disposition of lands of the United States under the control of the Secretary of War. This included grants of various kinds, such as deeds, easements, leases, licenses, and permits, and covered matters relating to juris-

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diction, land, taxation, use of appropriations, navigable waters, bridges, and river and harbor improvements. It was estimated that, prior to July 1, 1940, there were under control of the Secretary of War, for military and other purposes, approximately 2,500,000 acres of land belonging to the United States, and that during the last year, because of the development of the national defense program, this total rose to over 10,000,000 acres. This increase vastly complicated the work of the Reservations Section.

Patents Section filed, in 1941, 26 new applications for patents covering inventions of officers, enlisted men, and civilian employees of the War Department. This number, added to the 54 pending at the beginning of the year, brought the total to 80. Collaboration with the Department of Justice in collecting data for use in connection with the defense of suits filed against the United States in the Court of Claims arising out of alleged infringements by the War Department, amounting in the aggregate to \$47,000,000, was continued. Four new suits were filed claiming \$10,801,806.28, and four suits were dismissed in which the sum claimed was \$6,335,000. No judgments were rendered against the United States during the year. Routine correspondence involving opinions, reports, memoranda, and correspondence handled by the Section covered 1,402 pieces.

War Plans and Intelligence Section worked constantly with the General Staff on the legal aspects of war plans for national defense.

Index and Digest Section is preparing for publication a supplement to the Military Laws of the United States to present a Digest of Opinions of The Judge Advocate General of the Army from 1912 to 1940.

CORPS OF CHAPLAINS

The number of Army Chaplains was increased in 1941 from 600 to 1,550. A system of administrative chaplains was inaugurated, 19 being so assigned among the Four Armies, the Armored Force, the Air Force Combat Command, the Corps Areas, and the For-

eign Departments. They are assistants to the Chief of Chaplains, supervising activities of other chaplains in their jurisdiction. With an appropriation of \$12,816,880, a total of 555 regimental chapels were built. These had the appearance of small-town churches, equipped with electric organs, movable altars, lecterns, pulpits, and pews. They were allotted, where possible, one chapel to a regiment, and admitted of worship in any one of the three principal faiths, Protestant, Catholic, Jewish.

The Corps published *The Hymnal, Army and Navy*, containing over 500 selections, and orders of worship used by the three major faiths. An order was also placed for 100,000 copies of *The Song and Service Book, Army and Navy, for Field and Ship*, a book designed to meet all sorts of conditions in the field where facilities for worship must be improvised. Arrangements were also made to place a Testament in the hands of every soldier desiring one.

The Chief of Chaplains had available a fund of \$45,000 which was used to buy religious supplies and materials, "Yahrzeit Lamps," "Stations of the Cross," and "Communion Sets." Some of the money was also spent in tuning chapel organs and pianos.

Chaplains conducted 118,990 services with a total attendance of 11,639,924. Not included in this figure were 37,978 sacrament services participated in by 841,343 individuals. Chaplains performed 2,237 marriages, baptized 2,670, and conducted 3,172 funerals. Total attendance at various lectures, forums, and conferences was 9,292,945. Hospital and guardhouse visitations, 132,688 in number, recorded 3,602,824 contacts. In civilian communities, chaplains of the Army cooperated in 47,250 instances where there was a total attendance of 4,874,463.

ADJUTANT GENERAL'S DEPARTMENT

Demand for office space upon the part of agencies of the Office of Production Management necessitated many shifts of units within the Adjutant General's Office. Records of

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the Archives Division (formerly known as the World War Division) were split, those pertaining to organizations of the World War being housed in the District of Columbia's new National Guard Armory and those pertaining solely to World War military personnel going to the Navy Department's new building adjacent to Arlington National Cemetery in Virginia. Functions of the Morale Division were transferred from the Adjutant General's Office to the jurisdiction of the Chief of Staff, while fingerprint records of the old World War Division were taken over by the Federal Bureau of Investigation. Employing modern, efficacious business machines, the Machine Records Section was established to provide rapid and accurate means of segregating personnel data on punch cards.

Library books were circulated through 241 libraries containing 876,867 volumes under supervision of 74 professional librarians. Total circulation amounted to 2,075,763. Libraries were maintained at Service Clubs Operated at Army posts. These Clubs provided recreational and social activities for enlisted men and assured care for their families and friends visiting in camp. The Clubs employed 194 hostesses.

The Army Motion Picture Service presented 44,651 programs with a total attendance of 26,038,457. New theaters were built at Fort D. A. Russell, Texas, and Barksdale Field, Louisiana, while the one at Fort Lewis, Washington, was remodeled. In addition, 200 new theaters were established in mobilization-type theater buildings, tents, and recreational buildings in the United States, Alaska, and the Base Commands.

CIVILIAN CONSERVATION CORPS

The War Department conducted welfare activities and educational programs in this Corps. For welfare purposes there was available \$98,350, and for educational activities, \$3,837,389. On June 30, 1941, there were 1,500 camps scattered throughout the United States with a strength of 225,872 juniors and 24,684 veterans. These

were looked after by 77 Regular Army officers and 3,189 members of the Reserve Corps on a civilian status, including 24 Naval Reserve officers, 12 Marine Corps officers, and one Coast Guard Warrant Officer. At the close of the fiscal year, 27 companies were assisting in the national defense program by clearing and developing maneuver and training areas, and two companies were assigned to projects on Annette Island, Alaska.

PANAMA CANAL

The Panama Canal is an independent establishment in the Government service, directly under the President; but, as a matter of executive arrangement, the Secretary of War represents the President in the Administration of Canal affairs. The present Governor of the Canal Zone is Col. Glen E. Edgerton.

The primary function of the Panama Canal is to provide and maintain a waterway for vessels to make the transit from one ocean to the other with a maximum of safety and a minimum of delay. Secondary only to the operation of the Canal is the function of supplying various services to shipping. These services, under coordinated and centralized control, are provided by the various business units of the Panama Canal and the Panama Railroad Co.

During the fiscal year ended June 30, 1941, a total of 4,727 ocean-going vessels transited the Canal. This includes toll-paying vessels of 300 net tons or over, Panama Canal measurement. Of these, 2,353 transited from the Atlantic to the Pacific, carrying 9,488,446 tons of cargo, and 2,375 transited from the Pacific to the Atlantic, carrying 15,462,345 tons of cargo. The preponderance of cargo tonnage moving from the Pacific to the Atlantic was due to the large movements of bulky materials such as mineral oils from California and Peru, lumber and wheat from the west coast of the United States and Canada, iron ore and nitrates from Chile, sugar from the Philippine Islands, and rubber and tin from the Far East.

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At the beginning of the fiscal year 1941, the gross capital investment was \$559,635,638.06, which, after deducting depreciation and Canal defense property, was \$509,170,280.67. The net revenues of the Canal during the fiscal year 1941 amounted to \$8,852,036.84 on Canal operation and \$1,008,741.70 on business operations, a total of \$9,860,778.54. This net revenue is 1.95 per cent of the net capital. The population of the Canal Zone, as determined by the census of June, 1941, was 41,919, not including military and naval personnel. The total force employed in June, 1941 was 7,260 on the "gold roll" and 25,994 on the "silver roll." The gold roll comprises the supervisory, technical, higher clerical, and highly skilled mechanical employees. These employees are, with few exceptions, citizens of the United States. The force of silver employees is comprised almost entirely of natives of the tropics, a considerable number of whom are Panamanians. No land in the Canal Zone is privately owned, and the Zone is, in effect, a government-owned reservation dedicated to the operation, maintenance, and protection of the Canal and its appurtenances.

The area of the Canal Zone, including land and water, but not including the water area within the three-mile limit from the Atlantic and Pacific ends, is 552.8 square miles. The area of Gatun Lake, when its surface is at its normal elevation of 85 feet above sea level, is 163.4 square miles. The water area of the Zone, including Madden Lake, is 190.94 square miles. The Canal is 50.72 statute miles in length from deep water in the Caribbean Sea to deep water in the Pacific Ocean, while the shore-to-shore length is approximately 40½ miles. The channel ranges in width from 300 to 1,000 feet, and the minimum depth is 41 feet. The new third locks project provided in the appropriations of the 76th Congress got under way in the past year. Average time of passage through the Canal is from seven to eight hours; record passage was made in four hours, ten minutes. Maximum traffic capacity is estimated at 48 ships

of usual size per day or about 17,000 a year.

The following courses were presented in the Canal Zone Junior College during the school year 1940-41, and the number of graduates in each: Commercial, 11; Science-Engineering, 9; Liberal Arts, 7. These are two-year courses for which full credit is being given by colleges in the United States. There were 249 graduates from the two high schools in 1940-41.

NATIONAL GUARD

Induction of National Guard units which began Sept. 16, 1940 was completed Oct. 6, 1941. On July 1, 1941, total strength was 460,000 Enlisted Men, including 190,000 selectees. Eighteen combat divisions had 183,000 National Guard enlisted men, 140,000 trainees, and 15,381 officers. Non-divisional units, including harbor defense and antiaircraft, coast artillery, medical, air, field artillery, tank, antitank, engineers, and others directly under headquarters of Army Corps and field armies, had a total strength of 87,000 enlisted men, 50,000 trainees, and 6,562 officers.

Since 1933, every effort has been made to modernize the National Guard and make it more readily available for Federal service in an emergency. In 1941 the force was a creditable, well-modernized, and highly mobile component of our Army. Many organizational changes were made: from four cavalry divisions, 17 cavalry regiments were converted into seven horse-mechanized regiments, seven field artillery regiments, seven coast artillery regiments and separate battalions, and one antitank battalion. In addition, eight infantry regiments were converted into four field artillery regiments, eight coast artillery regiments, one antitank battalion, and one military police battalion. Tank companies, withdrawn from infantry divisions, were formed into provisional tank battalions; antitank units were expanded and increased in number; and eight new observation squadrons were organized.

To fill units to war strength, selectees were added to National Guard

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divisions. On June 30, 1941, enlisted strength by divisions in the National Guard was: 26th, 17,745; 27th, 17,316; 28th, 9,654; 29th, 17,333; 30th, 17,086; 31st, 17,418; 32d, 17,239; 33d, 14,803; 34th, 17,818; 35th, 16,769; 36th, 17,141; 37th, 16,999; 38th, 17,597; 40th, 14,817; 41st, 16,177; 43d, 15,147; 44th, 16,643; 45th, 17,402.

After the National Guard of the United States was inducted into Federal service, local police forces being inadequate to the tasks of executing laws, suppressing disorders, and protecting life and property, the President approved an act authorizing the states to organize and maintain a State Guard. On Oct. 31, 1941, the strength by Corps Areas of the State Guard so organized was: First, 14,808; Second, 15,208; Third, 7,719; Fourth, 18,591; Fifth, 5,700; Sixth, 10,366; Seventh, 8,450; Eighth, 15,195; Ninth, 13,149.

MILITARY EDUCATION

Expansion of Courses.—This phase of Army activity was subject to the same degree of expansion which the demands of national defense imposed everywhere. Hard and fast courses of instruction recorded in former years gave way to new courses with emphasis on intensity of course presentation coupled with speed in practical application of principles taught. A discussion of this expanded educational program follows. In each case, the name of the course presented at the various schools will be followed by a figure representing the number of graduates from such course.

U. S. Military Academy, West Point, N. Y.—At the end of the fiscal year 1941, condemnation proceedings for the acquisition of needed land at this school were practically complete, and there were added, early in 1942, the last 3,535 acres necessary to complete the 6,068 acres of the expansion program.

From the June, 1941, class of cadets, 423 (including 1 Filipino) were graduated. Annual entrance examination for candidates for admission to the Academy on July 1, 1941 was held at various military posts March 4, 1941,

and a validating examination only was held at West Point on June 21, 1941. A total of 1,740 candidates was designated to take these examinations; of this number, 538 satisfactorily passed all requirements, and of this number five declined appointment, while for 281 no vacancies existed.

Cavalry School, Fort Riley, Kan.

—Training capacity was increased in the past year, and the following numbers were graduated: Officers: Refresher, 80; Basic, Horse and Mechanized, 357; Motors, 76; Communications, 70; Candidates, 84. Enlisted Men: Noncommissioned, 210; Horseshoers, 208; Saddlers, 107; Motors, 34; Communications, 32; Armorers, 13. The following were trained for Quartermaster animal units: Horseshoers, 60; Saddlers, 24. The following numbers of Cavalry Enlisted Men were trained at other schools: Harley-Davidson Motorcycle School, 10; Quartermaster Transport School, 102; Radio Operators, Signal School, 113; Armored Force School, 18; Army Cooks and Bakers Schools, as used by Cavalry units; Indian Motorcycle School, 37; David Rankin School of Mechanical Trades, 100; Hampton Institute, 37. Sixty-three Cavalry Reserve officers were trained under the Thomason Act, of whom six were commissioned in the Regular Army.

Field Artillery School, Fort Sill, Okla.—Officers: Refresher, 102; Basic, 76; Communications, Horsemanship, and Motors, 258; Battery, 1,757; Advance, 62; Survey and Fire Direction, 20. Enlisted Men: Motor Mechanics, Communication, Battery Mechanics, 2,466.

Coast Artillery School, Fort Monroe, Va.—All courses in the past year were modified to three months' duration to meet the special needs of the current emergency. During each such period 632 officers and 645 enlisted men were graduated. By staggering of course, maximum use of facilities was made, and some officers and men were graduated every two weeks. On July 7th an officer candidate school was opened with an enrollment of 200 and a repeated course every three

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months. A special course was set up, enrollment 20, for Warrant Officers of the Army Mine Planter Service.

Engineer School, Fort Belvoir, Va.—This school gave special training in modern Engineer tactics to 2,342 officers during the past year. One Refresher Course, eight Instructor Courses, each with about 200 officer students, and one Officer Candidate Course with 100 students were conducted. Enlisted Specialists Courses enrolled 900 students.

Signal School, Fort Monmouth, N. J.—Officers: Radio, 146; Wire, 147. (Note: New courses have now been introduced to replace these. These new curricula will include: Divisional Wire; Electronics; Long Lines; Maintenance, Aircraft Warning; Supply and Transportation.) Enlisted Men: Cable Splicer, 83; Frameman, 21; Insideman, 14; Installer-Repairman, 260; Line Foreman and Lineman, 445; Powerman, 29; Radio Operator, 244; Radio Repairman, 397; Switchboard Installer, 45; Telegraph Operator, 100; Telegraph Maintenance Man, 86; Wire Chief, 115—the foregoing courses for enlisted men were of 3 months' duration. The following 10-months' courses were given: Telegraph Maintenance Man, 9; Radio Electrician, 25; Telephone Electrician, 61.

The Replacement Training Center at Fort Monmouth gave basic training throughout the year. A new Center will be ready for use in 1942, at Camp Crowder, Neosho, Missouri, capable of handling 4,500 trainees.

Finance School, Holabird Quartermaster Depot, Baltimore, Md.—This school conducts both resident and correspondence courses. Administrative personnel consisted of two officers, two warrant officers, and 19 enlisted men. From resident courses there were graduated 24 officers and 132 enlisted men, making a total of 1,330 officers, warrant officers, and enlisted men who have completed the course since 1920. A special class numbering 20 officers was conducted for National Guard and Reserve officers. Correspondence courses were completed by 397 students.

Infantry School, Fort Benning,

Ga.—In 1941 there were 400 officers on instructional and administrative duty at this school as compared to 75 in 1940; there was also a tenfold increase in the number of students, so that there were graduated in 1941 from all courses approximately 6,966 officers and 3,886 enlisted men. Courses conducted and graduates: Officers: Battalion Commander and Staff Officer, 1,445; Rifle and Heavy Weapons, 4,152; Communications, 854; Motor Maintenance, 505. Enlisted Men: Officer Candidates, 600; Radio Operators, 747; Motor Mechanics, 2,539.

Army Medical School, Washington, D. C.—A special course was inaugurated here in Tropical Medicine.

Medical Field Service School, Carlisle Barracks, Pa.—Field and tactical training for 500 officers every two months was provided here, and, in addition, six of the General Hospitals conducted courses in administration and hospital management for 300 officers per month. These General Hospitals were the William Beaumont, Walter Reed, Fitzsimmons, Letterman, Army and Navy, and Station Hospital at Fort Sam Houston. These courses develop enlisted specialists in dentistry, pharmacy, radiology, sanitation, veterinary medicine, surgery, medicine, and laboratory. An Officer Candidates School was available to specially qualified enlisted men with a capacity of 200 students every three months.

Ordnance Training Center, Aberdeen Proving Ground, Md.—This consists of two separate and distinct units—the Replacement Training Center and the Ordnance School, training 10,000 to 12,000 men at a time. The first four weeks are given to the necessary "school of the soldier," followed by nine weeks of basic Ordnance work. For officers and enlisted men, courses were given for refresher, basic, and specialist items. Total enrollment in these courses reached 2,000 in 1941.

Chemical Warfare School, Edgewood Arsenal, Md.—The curriculum was revised so that there was presented Unit Gas Officers' Course for

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Aviation and Line officers, four weeks' duration, making 13 courses annually. These courses were each normally attended by 50 captains and lieutenants. In collaboration with the Office of Civilian Defense, civilians were trained in defense against chemical attack. These courses were of two weeks' duration and drew approximately 50 students from municipal fire and police departments. Since its founding, the Chemical Warfare School has graduated a total of 4,044 students, including 3,330 officers and 570 enlisted men from various components of our armed forces. Approximately 150 civilians completed the course in Civilian Defense.

Quartermaster Corps.—Army expansion made necessary tremendous expansion of training in this Corps. In the nine Corps Areas, 49 bakers and cooks schools were established, and the regular four month course was shortened to two months; this made possible training of more than 16,200 enlisted men as bakers and cooks and several hundred Reserve officers as mess officers. The Quartermaster School moved from Philadelphia to Camp Lee, Virginia, where refresher courses, two months' duration, were completed by 420 officers, and 10-week courses were completed by 497 enlisted men. At the Motor Transport School, Holabird, Baltimore, 289 officers and 2,209 enlisted men were graduated. New schools for training motor vehicle specialists were established at Normoyle Depot, San Antonio, Texas; Fort McPherson, Georgia; and Fort Crook, Nebraska. A training program also was conducted at two civilian trade schools and five factory schools; through whose facilities 947 enlisted men received instruction. At four automobile factories, 291 Reserve officers completed special courses. Through arrangement with the University of Pennsylvania, a warehousing and materials handling course was established, and 16 officers attended.

Air Corps.—The total number of heavier-than-air student pilots under training, June 30, 1941, was 6,962. In enlisted technical schools (specialists)

there were on June 30, 1941, a total of 21,953 students. Specialists schools were established to create technical officers in meteorology, communications engineer, armament, bombardier, and navigation branches. Arrangements were completed under the Lease-Lend Act to train 4,000 students from the British Royal Air Force. Incidental to the change from a 12- to a 30-thousand pilot program, contract civil flying schools were increased from 29 to 44. Military flying schools of all types were increased from 25 to 42. Four training film stations were established and 22 complete training films were produced, giving more than 200 film-strip lesson subjects. The following recapitulation shows Air Corps graduates from Air Corps Service Schools and civil contract schools during the 1941 school year: Heavier-than-Air Pilots, 3,395; Navigators, 339; Bombardiers, 156; Aircraft Observers, 19; Communications Officers, 118; Armament Officers, 38; Photographic Laboratory Commanders, 52; Meteorologists, 132; Mechanics, 19,345.

The Army War College, Washington, D. C.—Ordinary courses of instruction usually given at this school remained suspended in the past school year. Instead, the building was used by the General Headquarters Force. The Adjutant General conducted the following courses in the building in the past year: School for Replacement Center Adjutants, 59 students; Adjutant General's Administrative School, 69 students; Adjutant General's School for Air Corps Officers, 98 students; and an Officers' Classification School, 10 students.

The Army Industrial College, Washington, D. C.—On Aug. 12, 1940, the course of instruction was reduced to one of four months' duration. This change from ten to a four months' course necessitated sharp condensation and the elimination of historical study of the agencies and organizations set up to carry out a procurement function during the last war. Emphasis was placed on procurement planning, industrial mobilization plans, and study of national resources

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and economic power. There was authorized an enrollment of approximately 50 Reserve and 10 Regular officers of the Army and 15 Reserve officers of the Navy and Marine Corps. Effective Jan. 1, 1941, the course was reduced to three months with a schedule of four courses per year. Enrollment was increased to approximately 85 Regular and Reserve officers.

The College offers opportunity to study the problems of war procurement and industrial mobilization. It trains men in the preparation of plans and for responsible duties in the execution of those plans. Valuable research is conducted and later translated into actual plans and procedures. The Army Industrial College is the only school in existence which gives its full time to the consideration of problems relating to mobilization of national economic resources behind a military effort. The College prepares its students by (1) grounding them in historical aspects of the procurement problem in order to em-

phasize the principles which should be applied to the present effort, (2) acquainting them with the organization, functions, procedures, and current activities of all those agencies directly charged with procurement or charged with the formulation of policies for the industrial mobilization of the nation, and (3) giving them an understanding of the principles of economic warfare and the agencies and methods available for its prosecution.

Command and General Staff School, Fort Leavenworth, Kan.—When the year opened, this school was on a schedule of special two months' courses which were continued throughout the year. Students were drawn from the Armies, the Armored Force, GHQ, Corps Areas, Service Branches, Replacement Centers, and the War Department General Staff. General instruction in staff duties was followed by specialized instruction for each student, dependent upon the staff duty to which he was to be assigned.

MEDALS AND DECORATIONS

Decoration	Awards Previously Made		Awards During Current Fiscal Year		Grand Total to July 1, 1941
	Medal	O.L.C.	Medal	O.L.C.	
Congressional Medal of Honor.....	1,826	0	0	0	1,826
Distinguished Service Cross.....	6,373	126	3	0	6,502
Distinguished Service Medal.....	2,122	7	3	0	2,132
Silver Star.....	11,022	1,761	344	33	13,160
Purple Heart.....	67,800	6,097	2,548	764	77,209
Soldier's Medal.....	306	0	46	0	352
Distinguished Flying Cross.....	92	5	7	0	104
French Fourragere.....	2,691	0	40	0	2,731

Service Medal	During Fiscal Year Ended June 30, 1941	Grand Total to July 1, 1941
Civil War campaign.....	203	3,243
Indian campaign.....	4	2,310
Spanish campaign.....	94	11,254
Philippines congressional.....	28	7,040
Spanish war service.....	227	28,741
Philippine campaign.....	186	39,747
Army of Cuban occupation.....	86	8,164
Puerto Rican occupation.....	43	1,893
China campaign.....	5	1,923
Army of Cuban pacification.....	2	6,466
Mexican service.....	30	17,093
Mexican border service.....	231	41,664
Victory.....	3,551	2,322,421

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CITIZENS MILITARY TRAINING CAMPS

Special camps were inaugurated during the fiscal year 1941 to train 3,000 young business and professional men at their own expense. There were 10 such camps in operation, with attendance divided among the Corps Areas as follows: First, 291; Second, 811; Third, 232; Fourth, 142; Fifth, 144; Sixth, 185; Seventh, 159; Eighth, 137; Ninth, 111.

CIVILIAN EDUCATIONAL INSTITUTIONS

	Units	Enrollment
Senior.....	226	110,827
Junior.....	139	69,454

At the close of the school year 1940-41, a total of 35 preparatory

schools, including high schools, were receiving government aid, and these schools had a total military training enrollment of 10,576.

ARMY EXTENSION COURSES

There were 333 specific arm and service subcourses, approximately 5,792,000 lessons and solutions. There were 82,257 students enrolled, a decrease of 27,087 under the previous year, caused mainly by the calling into service of National Guardsmen. Included in this enrollment were 828 Regular Army officers and 1,494 Regular Army enlisted men; 4,956 National Guardsmen; 66,270 Reserve Officers and 651 Enlisted Reservists; 5,035 citizens' military training camp trainees and 3,023 civilians. During the year, 60,950 students completed a total of 167,050 subcourses, requiring 2,774,085 hours of instruction at an average cost of \$2.21 per student.

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BY ROBERT S. THOMAS

ASSOCIATE MILITARY HISTORIAN, HISTORICAL SECTION, ARMY WAR COLLEGE

TRAINING

The year 1941 witnessed the greatest training effort ever exerted by our Army. Its basic creed was announced by General Marshall, who said in part: "Trained, disciplined manpower is the fundamental requirement of any army. Our training program is building a seasoned body of men who have the basic knowledge and skill to handle any job we may give them. We are making soldiers and leaders. When these men have completed their basic training we can put them in planes or in tanks, or behind guns, or operating radios and telephones, with only the final technical instruction necessary to cover the mechanism they are to use."

Maneuvers were scheduled throughout the United States to assist in achieving the Chief of Staff's ideal. In January, 1941, joint Army, Navy, and Marine Corps maneuvers were

conducted in Puerto Rican waters with troops from the 1st Division, Naval vessels from the Patrol Force of the United States fleet, and units of the Marine Corps 1st Brigade.

In April the War Department announced plans, later completed, to acquire land in Caroline County, Virginia as a training area for units of the First Army. This area is now known as the "A. P. Hill Military Reservation."

TRAINING AND MANEUVER SCHEDULE

Early in May, the Department announced its training and maneuver schedule for the year, as follows: Corps. May 24-June 30—IX Army Corps troops, Fourth Army, Fort Ord and Camp Hunter Liggett, California; June 1-13—VIII Army Corps troops, Third Army, in Brownwood, Texas, area; June 2-28—VII Army Corps

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troops, Second Army, with attached GHQ units, in Camp Forrest, Tennessee, area; June 16-27—V Army Corps troops, Third Army, Camp Beauregard, Louisiana, area; Aug. 11-30—VII Army Corps troops, Second Army, with attached GHQ units, Camp Robinson, Arkansas, area, and IV Army Corps troops, Third Army, Camp Beauregard, Louisiana, area; Aug. 16-30—V Army Corps troops against VIII Army Corps troops in Corps maneuver, Camp Beauregard, Louisiana, area; Oct. 6-Nov. 1—I Army Corps troops against II Army Corps troops in Fort Jackson, S. C., and Fort Bragg, N. C., area, and VI Army Corps troops to train in Bowling Green, Virginia, area. *Army*. Aug. 15-30—Fourth Army troops in Fort Lewis, Washington, area; Sept. 1-30—Second Army troops against Third Army troops, Camp Beauregard, Louisiana, area; First Army troops against IV Army Corps troops of Third Army, Fort Jackson, S. C., and Fort Bragg, N. C., area.

SCOPE OF THE MANEUVERS

Starting early in the year with small tactical exercises in which regiments were the basic units, training was built up to the Army maneuvers, planned by GHQ, in Louisiana and the Carolinas. The Louisiana maneuvers brought together the greatest aggregation of troops ever assembled in America in peacetime, nearly 500,000 men operating over 20,000 square miles of territory.

GHQ in its planning for the year's maneuvers departed from past procedure when a maneuver scenario was prepared in advance. This was like the script of a play wherein every move and situation was pictured in advance. In 1941 the "free maneuver" plan was used—the best man to win. Commanders were not restricted to certain boundaries, and he who showed the most initiative, enterprise, and dash could win.

As we entered this gigantic training program, we were short of much material and equipment, necessitating simulation of weapons in many instances. This situation brought con-

siderable criticism through the press; yet it is a device which has always been used by all countries which maintain armies. By the end of the year, production had pretty well caught up with requirements; in fact, in one case, that of the newly formed 93d Tank Destroyer Battalion, the Ordnance Department delivered its light and heavy antitank guns on self-propelled mounts in less than 60 days' time from receipt of the order.

COMMENTS ON RESULTS

General McNair, whose comments at the completion of the maneuvers appeared in the Dec. 1 issue of *The New York Times*, said: "The United States Army, given complete equipment, could fight effectively. . . . We have made splendid progress. But the simple fact is that you can't perfect units in one year's work." Some of the lessons he stressed as having been learned from the maneuvers were: tanks must be used in mass, not dispersed; mobile massed guns might be the basis of the answer to the tank; armored divisions must be accompanied by infantry; it was possibly necessary to create more motorized divisions; ground troops must become more conscious of the real threat of air attack; discipline must be improved; there must be considerable speed-up in production of antiaircraft guns, equipment and ammunition, together with centralized responsibility for training of antiaircraft troops; and, in the field of aviation, the need is for long-range, low altitude pursuit planes capable of long air patrols.

MANEUVER HIGHLIGHTS

During the progress of the principal training exercises, certain contributory highlights can be briefly noted. The 2d Armored Division (familiarily known as "Hell on Wheels"), Fort Benning, Georgia, became the first armored division in America to take the field for combat maneuvers. Later the 1st Armored Division, Fort Knox, Kentucky, was joined with the 2d to form the I Armored Corps. In a Marine Corps maneuver at New

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River, North Carolina, in June, elements of the 1st Division cooperated. From Oct. 9-16, the Air Force Combat Command conducted Interceptor Exercises to test alertness and effectiveness of Eastern seaboard defense against hostile air operations. The 1st Interceptor Command, Mitchel Field, covered the northern part of the seaboard from Boston to the Virginia-North Carolina boundary line, while the 3d Interceptor Command conducted similar exercises, Oct. 20-25, on the coast of the Carolinas and Georgia. Civilians forming an Aircraft Warning Service served as "Spotters" in these exercises.

Parachute troops made their first appearance in actual maneuvers in 1941. The Engineers produced over 200 tons of military maps for all the maneuvers. These maps were required to show roads, rivers, contours, road widths, load capacities and vehicle clearance of bridges, data *re* bridge repair and demolition capabilities, and railroad tunnel clearances. To test Army Corps reconnaissance means, the 6th Cavalry-Horse Mechanized Regiment was made a special mechanized regiment with motorcycles, armed scout cars, trucks, and other vehicles. The 107th Horse-Mechanized Cavalry was reorganized as a portée horse regiment in which horses are carried as far forward as possible in trucks. At Fort Lewis, Washington, the 87th Infantry Mountain Regiment was organized, numbering on its roster many members of mountaineering clubs and societies, along with personnel of the famous 15th ("Can Do") Infantry.

During the year some officers were weeded out for various reasons—physically unfit, temperamentally unsuited to demands of modern warfare, lacking in field experience, etc. Their places were filled by promotion of younger men on whom the heavy burden of responsibility now rests. It was inevitable that this revitalizing process, particularly where it involved officers who were politically powerful in their local communities, would cause some soreness. However, the greatest good of the entire Army was

the dominating factor considered in making the separations.

When, by the treachery of Japan on Dec. 7, 1941, we were forced to declare war on that nation on the following day, and subsequently, Dec. 11, against Germany and Italy, our armed forces stood at peak of strength and efficiency which gives promise of speedy, decisive victory.

AMERICAN DEFENSE

In a talk in October, 1940, President Roosevelt indicated very definitely that we were mustering our men and our resources not only to defend ourselves, but, in cooperation with the other American republics, to help defend the whole Western Hemisphere.

The fall of France in June, 1940, had removed any lingering doubts that may have persisted as to our ultimate place in the world conflict. We could no longer take the attitude which Under Secretary Patterson flayed while addressing the Nashville Chamber of Commerce. He said: "An innocent idea still persists in some minds that the war in Europe, real though it certainly is, is a localized rumpus that means no more to us than does a dog fight three streets away."

When France fell, our national military situation left much to be desired. We had neither supply, nor source of supply, of munitions, airplanes, guns, or tanks in anything like the quantities required for modern warfare. It was immediately necessary to augment our manpower and, at the same time, procure weapons to make that manpower effective. Outside of a few Army arsenals, we had practically no munitions industry in America, and quantity production of military aircraft was months away. This latter item stands out the more when it is realized that monthly production now equals and surpasses yearly production in 1939-40.

By 1941, the day of the raw, untrained soldier as an effective fighting man had passed. He had to serve for Bunker Hill, but for present warfare he must be a man skilled in the weapons of his craft and must be so

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trained as to be able to assume command responsibility if necessity demands it.

AID TO THE DEMOCRACIES

Our necessity, then, was to build a huge military machine, coordinated in all its parts, gear civilian production to the demands of equipping and supplying that machine, and define a policy which should govern the use of the machine so created and so furnished. These requirements early brought recognition of our rôle as regards the surviving democratic nations in their struggle against the totalitarian states represented in the Axis sheaf of power. If the democracies of Europe should fall through lack of substantial and immediate aid from us, our cause would be equally lost with theirs. With this principle in mind, it was admitted that Great Britain as a purchaser of war materials would rapidly come to the end of her resources if held to a cash basis. If we recognized Great Britain as our first line of defense abroad, we would certainly destroy that line unless a better plan of business relations between the two nations was devised.

The Lease-Lend Act, passed March 11, 1941, was the key which unlocked this situation. Under its provisions, this nation undertook to assist in the defeat of the Nazi regime by definite help to those countries engaged in armed conflict against Germany and her allies. Congress, by the provisions of the Lease-Lend Act, authorized the President to manufacture in our factories and shipyards weapons, munitions, aircraft, and vessels of all kinds, and to transfer title to them to Great Britain and other countries similarly engaged in fighting Hitler. The act was implemented by a \$7,000,000,000 appropriation as soon as passed. In exchange, land for military bases was made available to us in Western Hemisphere areas of the British Empire. We commenced the despatch of troops to these bases, located variously in Newfoundland, Bermuda, Trinidad, Jamaica, Saint Lucia, Antigua, British Guiana, Dutch Guiana, the Bahamas, and Iceland.

DEMANDS OF THE DEFENSE PROGRAM

From a purely military standpoint, the demands of the expansion program to meet the national emergency were staggering. Camp sites had to be secured and surveyed; camps and cantonments had to be built; selectees had to be inducted, received, trained, and assimilated into military commands; mechanized equipment had to be designed, standardized, manufactured, and tested under near-battle conditions; new organization tables had to be formulated, studied, tested, revised, and amended; uniform equipment had to be ordered and gotten into process of manufacture in huge quantities; powder and other explosive agents had to be manufactured in bulk hitherto unthought of; ordnance items, some 1,200 by separate nomenclature, had to be produced in vastly increased quantities; builders of locomotives had to turn to the building of tanks; automobile factories had to become airplane factories; thousands of horses and mules were required to be bought; mountains of foodstuffs had to be arranged to flow without interruption to points of troop concentration—an armed force greater than any ever previously imagined in the United States had to begin to pass from the blueprint stage to actuality. Furthermore, all these things and many more had to be done at a terrifically accelerated rate of speed.

DEFENSE ACCOMPLISHMENT

Work on the job began. As early as January, 1941, it was possible to report that military manpower was definitely on the increase. Puerto Rico was garrisoned by 12,000 troops as contrasted with less than 1,000 in the previous year; Alaska's few hundred had grown to 3,000; strength in Panama showed as doubled; the Air Corps stood at more than twice its 1940 strength. Progress had already been made in arranging for the manufacture of antiaircraft guns, tanks, planes, and airplane engines. Also, in January, 1941 Secretary Stimson appeared before the Foreign Affairs Committee of Congress and said, "Ef-

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fective defense of this country in the pending emergency depends in large part upon our giving effective help to Britain, and perhaps to other nations defending themselves against the Axis forces." In view of later developments, his last phrase was particularly prophetic.

By the end of January, 1941, production graphs were starting to show an upward curve, the first encouraging increase coming in the manufacture of infantry rifles.

From the beginning, the War Department had estimated that, dating from the fall of France in June, 1940, it would take 18 months to realize the program as planned. In those months we would be striving to do what Germany had used seven years in accomplishing.

At every point in accomplishing its military program the Army was ever conscious of the close interdependence of the Army and industry. When Under Secretary Patterson spoke at the Radford Ordnance Works in Virginia, he stressed this idea by paraphrasing a 1917 speech of former Secretary of War Newton D. Baker wherein he said: "National defense today is a matter of smokestacks."

DEFENSE APPROPRIATIONS

Appropriation figures released in March showed that, for the fiscal year ended June 30, 1941, Congress had appropriated funds and authorized contracts for national defense in the amount of \$12,500,000,000, not including \$4,500,000,000 set aside for construction of a two-ocean navy. A record was set for monthly obligation of funds when in June a total of \$4,986,300,310 was obligated. The spending of such huge sums is in itself a hard task. To order billions of dollars of construction work, new facilities, and supplies is a tremendous undertaking. Specifications must be prepared; bids, formal or informal, sought; reliable contractors must be secured; quantities, sites, and prices must be determined.

THE MILITARY PROBLEM

Appearing before the Truman Committee of the United States Senate in

April, Secretary Stimson crystallized our military problem under three main headings: (1) create large forces trained to operate in a war of movement; (2) train these forces for a new kind of mechanized warfare involving great numbers of new and specialized weapons, extremely complicated in character and difficult to produce rapidly; (3) build everything we need ourselves since, unlike 1917-1918, no other nation has what we need for sale to us. Finally, do all these things with the utmost speed.

Early in our efforts in 1941, buying and contracting was well centralized to eliminate overlapping purchasing and internal competitive bidding. Contracts involving expenditures in excess of \$500,000 were cleared through Donald Nelson, Director of Purchases in the Office of Production Management.

DEFENSE INDUSTRIAL PRODUCTION

Industrial production for defense was not, however, all clear sailing. In the first four months of 1941 there were 127 labor strikes in plants engaged in War Department defense production or defense construction. These caused the loss of 1,464,207 man days and seriously delayed production of many essential items. No particular field of industry escaped this trouble throughout the year; steel mills, factories, airplane plants, automotive material shops, coal mines, all were from time to time subject to these disorders, and in several instances rather drastic measures had to be used in order to bring about necessary adjustments.

Mid-August began to show appreciable production gains with respect to military items. We had produced 36% more planes in July, 1941, than in December, 1940; tank output had increased 800% and other vehicles, 600%; machine guns, 225%; anti-aircraft artillery, 400%; and smokeless powder over 400%.

By September, Secretary Stimson's January prophecy had come true. Russia learned in turn the value Hitler set on conventions and agreements

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previously signed. Under Secretary Patterson, speaking in Indianapolis, said: "In aid of our self-defense we have delivered to Britain destroyers, airplanes, firearms, machine tools . . . we must do the same for Russia."

Strength figures for the Army climbed steadily throughout the year. Training quickly got into high gear and culminated in the spectacular Army maneuvers (*q. v.*) which terminated in December.

THE CIVILIAN EFFORT

Civilian effort was aligned in support of the Army's effort. The United Service Organizations, dedicated to the soldier's welfare when absent on pass from camp or station, functioned splendidly. To get its work started, Thomas E. Dewey, noted prosecutor, headed a committee which raised \$10,-765,000. Mayor Fiorello LaGuardia of New York heads the Office of Civilian Defense, assisted by Mrs. Franklin D. Roosevelt. This organization seeks to coordinate all civilian activities.

BUILDING THE DEFENSE MACHINE

During the year, restrictions on the length of service of selectees were lifted, as was the prohibition of our drafted troops from serving outside the continental limits of the United States; a new basis of registration for all civilians was adopted, making available all possible manpower for service in or behind the battle lines; restrictive clauses of the Neutrality Act were set aside so that merchantmen could be armed and to provide that there were no longer any artificial barriers restricting the movement of our ships.

A nation was girding for war. At

certain points the machinery creaked instead of running smoothly. Isolationists and non-interventionists inveighed against the idea of building this huge military machine if it was to be used for service abroad. In a trice, these isms and attitudes evaporated in the face of Japan's treacherous attack on Pearl Harbor on the morning of Dec. 7, 1941. All loose ends were knit at once into a cohesive whole—the one aim, victory. Complacency gave way to combativeness. Early in April, Under Secretary Patterson, speaking before the Rotary Club of Washington, D. C., had given this warning: "We Americans have the habit of liberty. We have another habit which is not so good—the habit of complacency. Because we have always enjoyed liberty we assume we shall go on enjoying it indefinitely. We find it difficult to conceive of an America in which our liberty could be seriously infringed upon, let alone destroyed. . . . Complacency wrecked France. Complacency delayed England's program for three years . . . here in America complacency is Public Enemy Number One." The Hitler-motivated activity of Japan in Hawaii utterly blasted our last vestige of complacency.

As the year 1941 closed, our military situation showed great improvement. Our great modern Army was coming to life under the skillful guidance of our Regular Army personnel; its training in the routine of modern warfare was gathering momentum every day; our factories were producing increasing quantities of needed equipment and supplies; the incompetent and unfit were being eliminated; our national defense policy was beginning to take definite form and dimension.

NAVAL CONSTRUCTION AND EQUIPMENT

By PETER BAIN

NAVAL CONSTRUCTION CONSULTANT

PROGRESS IN THE DEFENSE EFFORT

It can not be said that smooth functioning marked every phase of

this country's defense effort through 1941, yet it can be affirmed that sustained and substantial progress was made in every direction. In no specific

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aspects of the whole were developments so signally gratifying as in the spheres of naval construction and equipment and of fleet combat preparedness and fitness. Worthy of record was the circumstance that these were notable right to the year's close.

The policy of the Navy Department to achieve month by month acceleration of its expansion program was predicated on a strategic situation requiring adequate fleets with supporting shore establishments and off-shore bases on both the Atlantic and the Pacific.

As evidence of the tremendous and unprecedented expansion in 1941, it may be noted that, by Dec. 31, 258 seagoing auxiliaries and 500 small craft of varied category and service utility had been added to the muster roll of national defense, raising the total effective strength in these specific divisions to 1,130 numerical units. It was of still greater importance, however, that combat vessels in commission at the end of December embraced about a score of capital ships, seven aircraft carriers, hundreds of cruisers, destroyers, submarines, gunboats, submarine chasers, motor torpedo boats, and miscellaneous patrol craft. Eleven government yards and 110 private yards were, for the most part, working three 8-hour shifts a day, Sundays included, to the end that 1,000 vessels, auxiliary and combat, ranging from harbor tugs to battleships, be rushed to completion and placed in commission. Still others of at least equal diversification were planned and in sundry stages of development, so that advantage could promptly be taken of new construction facilities.

Even before our involvement in war, consistent and continuing augmentation of Fleet strength in the Atlantic and Pacific was so broadly worked out and developed that active as was 1941 in new construction, equipment, and maintenance, it will remain for 1942 to demonstrate the full effect and value of the record. All through 1941, until Japan attacked the Hawaiian Islands on Dec. 7, the

United States underwent transition from a peacetime to a wartime footing, with tremendous industrial expansion for production of war material and equipment, much of it being keyed to the needs of military and naval aeronautics.

The Navy's authorized airplane complement was increased from 10,000 to 15,000, and appropriations for "Aviation, Navy" were rated as four times as great as in 1940. Lessons of the European war were promptly applied to aeronautical equipment design as well as to personnel training.

BUREAU OF SHIPS STATISTICS AND ACTIVITIES

During the first year of its existence, the Bureau of Ships set up obligations totalling \$6,634,858,854 and actually expended \$863,333,752, by far the largest annual obligation and expenditure for ships in the history of the United States. Increased tempo of the ship construction program greatly increased the necessity of additional facilities at Navy Yards, a total of \$388,436,970 being allocated for this purpose. In addition, \$141,346,113 was provided for increased shipbuilding facilities and \$82,065,807 disbursed to stimulate collateral industries. New construction and commissioning of increasing numbers of ships calls for increasing repair facilities. Funds were provided to establish 30 section bases, while five additional bases were authorized by Congress.

A highly important factor in the development work of the Bureau of Ships was the opening of the David Taylor Model Basin, the move to which was completed in November 1940. According to Admiral Robinson, chief of the Bureau, the Fleet has been maintained in very satisfactory material condition. Due, however, to so much new construction being done at Navy Yards, overhauls of numerous destroyers and auxiliary vessels, also district craft, have been undertaken and accomplished at private shipyards, the experience so gained by these latter being considered valuable, because, under war conditions an extended use of them will be neces-

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sary. Experience of the European war led to the installation of additional anti-aircraft guns and splinter protection, also installation of sky lookout stations and fitting of mine protection equipment.

The annual report of the Bureau of Ships rates the hull and machinery of destroyers built since 1920 as in excellent condition. Of destroyers built prior to 1920, hull and machinery condition is classified as good, having shown a marked improvement during 1941. At the beginning of the fiscal year, condition of recommissioned destroyers was rated as only fair, the vessels having been put back in commission with just sufficient overhaul to enable them to function. After recommissioning, however, Navy Yard overhauls resulted in very material improvement in the operating fitness of the various vessels. Fifty of these recommissioned destroyers were transferred to Great Britain during September, October, November, and December 1940.

As indication of how early in 1941 the drive took form to accelerate naval ship construction, Chairman Vinson of the House Naval Affairs Committee said on Jan. 4 that, while a "pretty good batch" of fighting ships would join the fleet during the ensuing twelve months, the defense program would have to be both expanded and accelerated. At the same time he disclosed that war craft already in service would have bomb-proof "caps" fitted over their decks as part of a proposed \$300,000,000 program of strengthening aircraft defenses. On Jan. 6, without ceremony and three months ahead of schedule, keel-laying of the 45,000-ton battleship *Missouri* took place. A sister-ship of the *Iowa*, both vessels incorporate in design and detail features the findings of American naval attaches abroad on observation duty.

FEDERAL BUDGET'S NAVAL DEFENSE PROVISIONS

A chart of Federal expenditures for the fiscal year 1942 sent to Congress on Jan. 8, 1941 by President Roosevelt in his annual budget message re-

vealed a total minimum outlay of \$17,485,528,049, of which \$10,811,314,600 was earmarked for defense. The defense estimate covered only rearmament; it did not include funds for underwriting the production of material and equipment aid by this country to the Allies.

Of the \$10,811,314,600 defense recommended in the new budget, \$3,447,394,000 was on account of the Navy and was deemed sufficient to continue the construction of its over-all program besides doubling personnel. Provision, too, was included for a substantial increase in number of airplanes and for the training of pilots, technicians, and ground crews. Approval of the Navy's request for \$300,000,000 to equip the Fleet with modern anti-aircraft devices was voted on Jan. 15 by the House Naval Affairs Committee and similar action by the Committee next day sought emergency authority for more naval craft, shipyards, armor, and gun factories. The President's request for \$350,000,000 for new cargo carriers and new shipyards was referred to the House Appropriations Committee.

The bills unanimously reported to the House by the Naval Affairs Committee authorized a total of \$1,209,000,000 in expenditures for new construction of 400 vessels of various types, 280 of which were to be immediately undertaken and the remaining 120 as soon as shipbuilding facilities became available. The authorization of \$315,000,000 by the Committee for shipyard expansion was expected to accelerate completion of our enlarged two-ocean fleets. The authorization of \$194,000,000 related to the doubling of the Navy's ordnance facilities, while that of \$300,000,000 was the estimated cost of equipping the Fleet with the most up-to-date anti-aircraft devices.

On Jan. 21, 1941 the House passed without a dissenting vote the bill authorizing the Navy to spend \$300,000,000 on modern anti-aircraft defenses for the Fleet. The bill provided for the installation of additional anti-aircraft guns where practicable on all types of combat and auxiliary

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ships; increased magazine capacity therefor; improvement of mechanical ammunition-handling equipment; additional "blisters" on capital ships at the waterline to protect against bombs; installation of more modern fire-control equipment; installation of light armor around topsides battle stations to protect personnel; and supplanting of small-caliber guns with others of greater anti-aircraft effectiveness.

The House, in almost unanimous approval of the Navy program, passed on Jan. 22, 1941 a \$909,000,000 bill for expanded shipyards, doubling of ordnance facilities and providing for 400 new ships of various categories and services. The action taken brought to \$1,209,000,000 the amount authorized for naval expansion in two days. This latest measure authorized the expenditure of \$400,000,000 for 400 auxiliary vessels, including a doubling of the "mosquito" fleet of motor torpedo craft; \$315,000,000 for expansion of private shipyards to take care of construction of new naval units, and \$194,000,000 for doubling naval ordnance manufacturing facilities.

In requesting the additional funds for expansion of shipbuilding facilities, the Navy Department informed the House Naval Affairs Committee that contracts under which the money would be spent would be of three types. Under the first, the Navy would expand its own facilities. Under the second, the private contractor would amortize his costs through Navy payments over a period of five years. At the end of this period, the Navy would obtain title. The third condition provided that the Navy Department advance the private contractor 60 per cent of the cost and, through agreement, the question of title or prorated ownership would be determined after five years. At the Philadelphia Navy Yard, on Jan. 25, the keel of the 45,000-ton battleship *Wisconsin* was laid with traditional ceremony.

On Jan. 27, the Senate passed and sent to the White House the \$300,000,000 measure providing new con-

struction and equipment for naval craft against air attack. President Roosevelt signed the bill on Jan. 30. On Jan. 29, the Senate passed and sent to the White House the final items of the \$1,209,000,000 authorization hitherto pending for expansion of the Fleet. In the Independent Offices Appropriation bill passed by the House on Jan. 31, were two major items of \$160,000,000 in cash and \$180,000,000 in contract authorizations for the Maritime Commission to continue its 50-ships-a-year construction program. President Roosevelt on Feb. 6, signed the bill appropriating \$313,500,000 to finance quick construction of 200 war-time cargo carriers which, as far as possible, were to be pre-fabricated. Coincidentally, the Maritime Commission signed contracts for the development of five of the seven yards projected for the program.

ISLAND OUTPOST ARMAMENT

An \$898,392,932 program for additional naval vessel construction and for bomb-proof shelters and miscellaneous defense devices for the nation's far-flung outposts was sent to Congress by President Roosevelt on Feb. 12, 1941. The requests were in the form of supplemental estimates involving both cash and authority to enter into contracts. Of the total sought for expansion of existing naval and air bases, \$61,745,500 was earmarked for expenditure in the Caribbean area, \$46,943,050 in the mid-Pacific, and \$27,858,500 in Alaska. Funds also were sought for establishment of submarine operating facilities at Kodiak Island, Alaska, at Midway Island in the Pacific, and at the Guantanamo naval base.

Among the larger items on the list were \$100,000,000 for construction of naval craft of unspecified types, and \$102,000,000 for armor, armament, and ammunition. Also called for were \$96,680,000 in cash and contract authorizations for the hire or chartering of auxiliary vessels as necessary, \$64,000,000 for the Bureau of Ordnance and \$96,000,000 for the purchase of planes and other equipment. A total

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of \$230,253,000 was recommended for the shore construction projects, embracing a diversity of work at naval air stations.

Among the projects for which funds were sought, together with the amounts involved, may be noted the following: Argentina, Nfld. air station, collateral items of machine tools and equipment for work in progress, \$1,600,000; naval air station, Trinidad, development of protected Fleet anchorage and collateral items for work under way, \$5,100,000; air station, Bermuda, collateral items of machine tools and equipment for work under way, \$1,100,000; Iona Island, N. Y., ammunition depot and power plant, improvement, \$100,000; Brooklyn, N. Y., medical supply depot and extension of supply storehouse, \$150,000; Jacksonville, Fla., air station, surface craft housing, messing and recreation facilities, \$173,000, and additional training facilities \$1,260,000; Charleston, S. C., air station and additional aviation facilities, \$950,000; Coco Solo air station, additional aviation facilities, \$450,000 and development of lighter than air facilities, \$2,000,000; Miami, Fla., air station and additional training facilities, \$550,000; Newport, Rhode Island, torpedo station, additional torpedo manufacturing facilities, including buildings, accessories, and power plant improvement, \$2,855,000; Boston Navy Yard, additional ship repair facilities, \$3,000,000; New London, Conn. submarine base additional facilities, \$755,000; New York City Navy Yard, housing and mess facilities, \$464,500; Key West, Fla., air station additional facilities, \$2,081,000; Charlotte Amalie, Virgin Islands, Marine Corps aviation additional facilities, \$1,281,000. On February 20, President Roosevelt signed a bill authorizing the Coast Guard to create a reserve to guard the nation's shores.

ALLOTMENTS FOR LEASED BRITISH BASES

Award by the Navy Department of contracts totalling \$42,036,000 for construction of naval aviation facilities in British insular possessions in this

hemisphere was disclosed on March 3, 1941 when contracts for additional work on naval projects were made public. The additional contracts amounted to \$12,132,350 of which \$7,-114,000 was for additional work on island bases leased from Great Britain in exchange for 50 United States destroyers. The contracts made public included \$3,810,000 for dredging and other work at St. Lucia and Antigua in the British West Indies; \$1,004,000 for the purchase, assembly, and fabrication of materials to be used at the naval air bases in Newfoundland, Bermuda, Bahamas, Jamaica, Antigua, St. Lucia, Trinidad, and British Guiana, and \$2,300,000 for temporary shore facilities, dredging, and piers at Jamaica. Previous contracts involving British possessions included \$9,150,000 for the Bermuda base, \$11,487,000 for bases at Trinidad and British Guiana, and \$14,285,000 for the Newfoundland base. Other contracts announced included \$1,697,000 for a Pensacola, Fla. naval air station; \$310,000 for a Coco Solo base in the Panama Canal zone; \$400,000 for improvements at Norfolk, Va. air station; \$75,000 for a Newport, R. I. station, and \$53,500 for fuel oil storage tanks at Guam and for repairs to the air station on Midway Island. There was also \$677,000 for ammunition and fuel depots in the Puget Sound area, \$175,000 for the New York Navy Yard, \$70,000 for the submarine operating base at Norfolk, Va., \$120,000 for the Diesel engine school at Norfolk, Va., \$80,000 for the Charleston (S. C.) Navy Yard, and \$86,000 for an engine-testing building at the naval air station, San Juan, P. R.

With the Lease-Lend bill out of the way, the Senate on March 10 gave swift approval to various House bills already noted, the objective of all of which meant the strengthening of the nation's sea defenses. On top of this Senate action came a request from the President for authorization of a further emergency appropriation to the Navy of \$300,841,820. This legislation was designed to permit contracting for facilities as well as for ships, aircraft, shore stations, and

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the like. Reaching Congress without advance notice, its largest item amounted to \$113,118,820 for emergency acquisition of naval guns and ammunition. It also included \$2,500,000 for the San Diego ammunition depot, a \$77,000,000 supply fund, and \$15,000,000 for the East Coast Marine Training area.

NAVAL NEEDS FOR THE 1942 FISCAL YEAR

A recommendation for \$3,446,585,144 for the Navy's needs in the fiscal year 1942, nearly half of which was for construction of the two-ocean fleet, was presented to the House on March 13, 1941. The bill started on its way through Congress spurred by an official warning that the Axis nations possessed greater potential sea power than the United States and that the already dangerous war situation would sooner or later directly threaten the United States. As the House Appropriations Committee gave its approval to the bill, it made public testimony from Secretary Knox and other members of the naval High Command given during secret hearings on the measure which started on Feb. 3.

Admiral Harold R. Stark, Chief of Naval Operations told the Committee: "The international situation may continue to grow worse for some time to come." He added that, while no one could predict the future with accuracy, "it is imperative that we arm ourselves as rapidly as possible." Secretary Knox said that on Jan. 1, 1941 the combined naval strength of Germany, Italy, and Japan totalled 1,835,000 tons compared with this country's 1,250,000 tons. He added that France had 210,000 tons of effective combat ships.

The Appropriations Committee stated that, during hearings on the bill, the Navy disclosed that it was getting ready to equip its ships with a new type of device enabling them to detect the approach of enemy surface vessels and aircraft "in time to use the information tactically." No details were given, although references

were made at several points to "very high frequency equipment for radio echo sounding."

In giving details relative to hearings on the bill, a chart accompanying the testimony of Admiral S. M. Robinson, chief of the Bureau of Ships, disclosed that 68 vessels authorized prior to 1939 had stepped-up in construction as high as 13 months ahead of schedule in the case of the battleships *Iowa* and *New Jersey*. It was revealed that the battleships *North Carolina* and *Washington* were three months ahead of schedule, while the battleship *North Dakota* was four months ahead. Forward of schedule for from one to nine months were the cruisers *Atlanta*, *Juneau*, *San Diego*, *San Juan*, *Cleveland*, and *Columbia*, the latter being nine months and 22 days in advance. The average for destroyers seemed to be about six weeks ahead for the entire lot of 27 being constructed under those particular authorizations. The only category showing minus figures was that of seaplane tenders building at Puget Sound, being behind only because the Navy Yard there had been utilized largely for repair work on other craft.

BATTLE CRUISERS

In record time for a measure of its financial proportions and material scope, the House passed and sent to the Senate on March 14 the Navy's 1942 supply bill of \$3,446,685,144 which provided for continuation of construction of the two-ocean fleet and, therewith associated, the information that battle cruisers would be embraced within the bill's scope. According to Chairman Vinson, chairman of the House Naval Affairs Committee, the decision to build battle cruisers of from 20,000 to 25,000 tons each had nothing to do with the Japanese naval construction program. Contracts for six of these vessels were placed with the New York Shipbuilding Corporation, Camden, N. J., the estimated cost of each being about \$43,000,000 or about half the cost of a battleship. It is understood that \$7,000,000 would be spent on each

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ship during the fiscal year 1942; the Navy Department made public no details of the new development.

The supply bill allotted \$1,515,000,-000 for naval construction in 1942. Other appropriations included \$278,-000,000 for shore developments, \$434,-000,000 for aircraft, and \$548,160,000 for modernizing older types of ships. The measure also contained \$5,000,000 for starting construction of 27 section bases for submarine chasers, mosquito motor boats, and patrol craft. On March 20, 1941 Secretary Knox let it be understood that contracts had been awarded for 239 small auxiliaries and patrol craft at a cost of \$100,315,-682. The contracts embraced 50 small wooden minesweepers costing \$6,438,-000, 50 wooden submarine chasers costing \$3,885,428, and 130 large wooden minesweepers costing \$42,905,-214. Ten steel fleet tubs costing \$13,-565,372 and 19 steel minesweepers costing \$33,521,668 rounded out the list.

In a two-hour session on March 20, the Senate approved appropriations and authorizations totalling \$3,-950,000,000 of which \$3,866,000,000 was intended to build up the home defenses of the United States. The home defense expenditures and authorizations were scattered throughout four bills. Construction, operation, and maintenance of the Navy during the fiscal year 1942 accounted for \$3,415,-521,750, and \$342,876,333 belonged to provision for air and naval bases in both the Atlantic and Pacific. Included in these latter was \$8,100,000 for enlarging the naval station at Samoa, \$4,700,000 for fleet facilities at Guam, and \$66,050,000 for development of bases acquired from Great Britain. Important or otherwise, in view of capital ship vulnerability later disclosed, naval experts in the House at this juncture were credited with declaring that the next five battleships to be constructed under the two-ocean fleet program would be of from 60,000 to 65,000 tons displacement. In the Fifth Supplemental National Defense Appropriation Bill which the House passed on March 21, totalling \$4,073,810,074, for the cur-

rent fiscal year 1941 and consisting of cash and contract authorizations for both the Army and Navy, the former had \$148,039,296 earmarked for expenditure on the Atlantic bases acquired from the British Government and in Alaska. On the other hand, expenditures of the Navy would relate particularly to ordnance stores purchase, the acquisition and conversion of 12 additional auxiliary vessels, and for reserve and other miscellaneous material.

LEASE-LEND CONSTRUCTION

A naval construction report made public on March 21 disclosed that more than 300 combatant and auxiliary ships of all categories were building in all Navy Yards and in most of the private shipyards. During February, keels were laid for the cruiser *Birmingham*, the submarines *Growler*, *Grunion*, *Drum*, *Flying Fish*, *Finback*, *Silverides*, and *Trigger*, the destroyers *Nicholas*, *O'Banion*, *Aaron Ward*, and *Buchanan*, the submarine tender *Sperry*, four modern submarine chasers, and four modern motor torpedo boats. Among ships well on the way to completion were the aircraft carrier *Hornet*, the capital ships *South Dakota* and *Massachusetts*, the cruisers *Atlanta*, *Juneau*, *San Juan*, *San Diego*, *Cleveland*, and *Columbia*, the submarines *Mackerel*, *Marlin*, *Gar*, *Grampus*, *Grayback*, *Grenadier*, and *Gudgeon*, the destroyers *Wilkes*, *Nicholson*, *Swanson*, *Ingraham*, *Bristol*, *Ellyson*, *Monssen*, and *Woolsey*. Combatant craft completed during February included the submarine *Grayling* and the destroyers *Meredith*, *Grayson*, *Ludlow*, and *Ericsson*. Further disclosed was the award of contracts for the construction of 239 small auxiliary and patrol vessels costing \$100,315,682 to a nationwide list of small and medium-sized shipyards. The unit detail embraced small wooden minesweepers, large wooden minesweepers, wooden submarine chasers, and steel fleet tugs.

On March 24, the 24,289-ton liner *Washington*, on the eve of a scheduled trip to California, was suddenly placed in military service as an Army

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transport. On the same date, the Senate swung fully into the new spirit of speed and unity relative to the Lease-Lend program, passing in near-record time the \$7,000,000,000 appropriation requested by the President to finance aid to Great Britain and her allies. In particular, while there was suppressed all details of the actual supplies which the \$7,000,000,000 would provide or their specific destinations, the bill itself indicated the few general directions that follow: combat aircraft of all types and aeronautical material, \$2,054,000,000; ordnance, armor, and ammunition, \$1,343,000,000; for plant facilities to manufacture new products, \$752,000,000; for industrial, agricultural, and other commodities, \$1,350,000,000; for tanks, armored cars, and motor vehicles, \$362,000,000; for ships and water craft generally, including repair of British and other war vessels, \$629,000,000; for miscellaneous military equipment, \$260,000,000; and for testing, repairing, and outfitting, \$200,000,000. Secretary Knox, it was revealed, informed the Senate subcommittee that no definite decision on the number of tanks, ships, planes, or other weapons for release to Britain, or other countries would be made until the production lines were functioning. He confirmed reports that the President already had created an inter-departmental committee to handle release of all war material to foreign governments under the Lease-Lend program.

SUPPLEMENTAL CONSTRUCTION CONTRACTS

On April first, the War Department ordered a flotilla of what are known as "rescue" boats for service in coast patrol. The number was not disclosed in the contract placed with the Owens Yacht Co. of Baltimore. Their cost, however, was estimated at \$254,000. Award of a contract estimated at \$31,000,000 for construction of two shipbuilding dry docks at the New York Navy Yard was announced by the Navy Department on April 3. Both docks are designed to care for repair and overhaul work as well as

for new vessel construction. When completed, the Navy Yard will be able to produce four capital ships simultaneously.

On April 3, without debate in either branch of Congress, the \$4,390,000,000 Fifth Supplemental Defense Appropriation Bill was sent to the White House for the President's signature. As already noted, a relatively small portion of it is earmarked for ordnance and stores for the Navy. A few days later, however, the Navy Department contracted for the construction of five gasoline-carrying tankers to cost \$2,000,000 each, exclusive of a fixed fee of \$120,000 per vessel to the contractor—the Seattle-Tacoma Shipbuilding Corporation of Tacoma, Wash. The General Motors Corporation's Diesel engine division at Cleveland, O., received awards totalling \$40,915,000 for propelling machinery for 18 submarine chasers and 90 minesweepers. Contracts totalling \$13,129,000 went to the United Aircraft Corporation for expansion of its East Hartford, Conn. airplane engine plant and for the equipment to operate it. Of the amount, \$9,606,920 was allocated for acquisition and installation of the additional machinery and equipment, and the balance for new buildings.

Plant expansion contracts thus far awarded this concern amounted to \$18,321,080. A \$2,400,000 contract was awarded the Luken Inc. of Coatesville, Pa. for expansion of its plant to manufacture steel for shipbuilding. Of date April 11, the Navy currently was receiving adequate supplies of essential turbine equipment, about 75 per cent of steam turbine production going directly into naval vessels. This disclosure was made by the Westinghouse Electric & Manufacturing Co. on the occasion of the start of a new construction program which included equipment for more than 100 combat craft and about 30 cargo carriers and tankers.

The White House revealed on April 9 that steps had been taken to transfer ten Coast Guard cutters to Great Britain for Atlantic patrol duty. These sturdy little ships of about the same

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tonnage as destroyers, although more lightly armed and less speedy, were expected to contribute materially in combatting Axis submarines. Presumably, the transferred craft are about 250 feet in length, 2,000 tons displacement, and 16 knots speed. Their cruising radius is about 8,000 miles.

Between April 1 and 24, the Navy Department placed contracts for 171 small war vessels, 44 of which were ocean-going minesweepers, 50 were coastal minesweepers, 10 were fleet tugs, and 67 were submarine chasers. Pending were six additional large minesweepers. All construction was scheduled for private shipyards. Also, keels were laid for one submarine, one submarine chaser, and two fast torpedo boats. In the same period, two coastal minesweepers were launched, and the battleship *North Carolina* was commissioned. On April 25, the Navy awarded a contract to the Electric Boat Co. of New York for construction of 12 motor torpedo boats and 12 motor boat submarine chasers. The total cost was estimated to be \$5,108,880. The motor torpedo boats were to be similar to some 30 already built and of which a number already had been transferred to Great Britain under the Lease-Lend program.

A special dispatch to *The New York Times* of April 29 indicated that the New York Shipbuilding Corporation of Camden, N. J., was virtually tripling its shipyard capacity by way of a \$12,000,000 expansion program. On completion, it will be possible to have ten naval combat vessels under construction on the ways at any one time. Three of the five new ways were almost completed at date. The five existing ways were housing the new battleship *South Dakota* and four of 13 cruisers on order. The five existing ways—all inclosed—will in due course be increased to a length of 800 feet. Concurrently with the aforementioned, outfitting basin, and crane and other equipment provision is keeping pace. In addition to the *South Dakota* and 13 cruisers, the Corporation had on order the six battle cruisers already

noted, and was completing the repair ship *Vulcan* and the seaplane tender *Currituck*.

NEW BATTLESHIP NORTH CAROLINA

Against an ominous background of war, the 35,000-ton battleship *North Carolina*, largest, most modern, and most powerful of its class yet built in the United States, took its place as a ship of the line on April 9 at the New York Navy Yard. The commissioning was brief and traditional. She is the first capital ship to be commissioned in this country since 1923; incidentally, however, she was symbolic of 16 sister ships of the line at varying stages of construction, each more powerful and generally more efficient than herself. The *North Carolina* is 704 feet long, has a beam of 108 feet, and a displacement mean draft of about 27 feet. Her keel was laid in October 1937. Geared turbines developing 115,000 horse power are reckoned as assuring a sea speed of well over 27 knots. The horse power energy is transmitted to four propellers located near the stern of the vessel. Main armament consists of nine 16-inch 45-caliber guns in three turrets. A powerful secondary battery for service against both surface ships and aircraft is said to bristle with small caliber, anti-aircraft guns of many types. For spotting and observation, several aircraft units are embraced in the myriad equipment detail. Armor is provided against 16-inch shell fire at battle range and against heavy bombs.

In addition to the usual below-water, triple skin construction of modern war craft, the *North Carolina* is subdivided generously into watertight compartments in order to localize as much as possible the effect of torpedo or mine damage. The watertube boilers are oil-fired and are designed and equipped to generate and produce high pressure, high temperature steam at peaks consonant with the most up-to-date practice. A new system of double rudder arrangement assures more effective steering control. A distinctive feature of the new vessel is

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that no portholes are visible. The *North Carolina* and her new sisters originally had portholes planned, but war lessons had shown that the concussive force of large bombs that hit alongside smash even the steel battleports and cause interior damage. Portholes, therefore, were blanked off. Other lessons learned from modern war demonstrate a trend to alter substantially both the interior and exterior of fighting craft. Cutting down of superstructures, streamlining, and the bristling array of anti-aircraft guns are noted as changes from exterior traditional practice.

SPEEDING OF CONSTRUCTION AND ALTERATIONS

On May 1, the Senate delivered to the White House the \$3,415,521,750 Naval Appropriations bill containing \$1,515,000,000 to speed the construction of 729 vessels of all types now under way in the two-ocean fleet program. Adopting a conference report previously approved by the House, the Senate provided for an expenditure of \$434,550,000 on naval aviation of which \$350,372,000 would be available for payments on 7,129 planes already on order. A total of \$142,000,000 in cash and \$150,000,000 in contract authorization was provided for alterations and repairs to combatships, including modernization of the aircraft carriers *Lexington* and *Saratoga*.

President Roosevelt signed the bill on May 6. The day following, on oral orders from the President, the Navy Department took over the seagoing fleet, equipment, and personnel of the United States Coast Guard. By custom and law it is altogether usual for the Navy to absorb this highly important auxiliary in a time of emergency. The Coast Guard as such continued to retain its shore functions, consisting of life-saving, beach patrol, and the rendering of assistance to vessels in distress offshore.

On May 10, the Associated Shipbuilders of Seattle, Wash. notified the Navy Department that it would return 50 per cent of its original estimated profits on a \$1,750,000 con-

tract for converting a passenger liner into a troop transport. The company explained that later award of contracts totalling about \$17,000,000 for building four seaplane tenders had so increased the volume of work and decreased overhead that returns would reach a point at which they would be excessive. It was the first time during the current emergency that a Navy contractor had voluntarily offered to refund profits. Associated Shipbuilders is a joint venture of the Puget Sound Bridge and Dredging Co. and the Lake Union Shipyards, both of Seattle.

NEW BATTLESHIP WASHINGTON JOINS THE FLEET

On May 15, a 35,000-ton floating fortress was converted by traditional Navy ceremony from a "construction project" at the Philadelphia Navy Yard into the battleship *Washington*, one of the two mightiest warcraft units afloat, after the smashing of every building record in American naval history for ships of the line. The big ship was not only five months ahead of schedule but actually 17 months ahead of the originally planned completion date. The circumstance that the *Washington* is sistership to the *North Carolina* makes unnecessary any further detailed reference.

LAUNCHING OF BATTLESHIP SOUTH DAKOTA AND REPAIR SHIP

On June 7, the New York Shipbuilding Corporation, Camden, N. J., launched the 35,000-ton battleship *South Dakota*, sistership to the *North Carolina* and *Washington*. Immediately following launching, the keel for a new cruiser was laid on the vacant ways. Completion of the *South Dakota* is expected from seven to eight months ahead of schedule. The repair ship *Vulcan*, a \$14,000,000 ocean-going "machine shop," was delivered to the Navy Department on June 16 by the New York Shipbuilding Corporation. This 9,100-ton craft is slightly smaller than a cruiser and is the first such vessel built for the

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Navy since the keel of the 8,125-ton *Medusa* was laid twenty years ago. Equipped with more than \$1,000,000 worth of tools, her crew of trained mechanics will be able to care for much of the repair work with the Fleet at sea.

MODERNIZING FLEET AIR DEFENSE

At a press conference on June 25, Secretary of the Navy Knox indicated that more than half of the work of modernizing defenses of the Fleet against air attack had been completed. He gave no details of the modernization, contenting himself with the statement that the work in progress was based on the constant study of reports received from Navy observers on board British ships participating in operations in the Mediterranean and the Atlantic Ocean.

PROGRESS IN SHIPBUILDING

Secretary Knox on June 1 revealed that, since January 1, 1940, the Navy Department had let contracts for 2,831 vessels costing \$7,234,262,178. In addition, it had started new shipbuilding facilities in 26 states. The grand total included small boats and acquisitions for conversion, although these were relatively not large in the aggregate. On June 1, the naval shipbuilding program employed 150,893 men in Navy Yards and 52,523 in private shipyards. A supplementary figure as of June 20, showed the Navy in the process of building or converting 958 vessels. These included 355 combat craft with an aggregate tonnage of 2,217,580; 96 auxiliary vessels; 271 vessels belonging to the mine category and 194 to the patrol category; and 42 net and boom craft. In addition, not rated as ships or vessels, the Navy was building 1,098 small boats known as "district craft."

The program of building facilities was going forward under an appropriation of \$500,000,000 for that particular purpose. Contracts had been signed for facilities to cost \$381,677,944, letters of intent had been issued for \$41,000,195 worth of work, while prospective contracts involved \$77,-

321,860 of expenditure. The House approved and sent to the Senate on June 25 the second deficiency bill of the session which embodied \$894,221,310 for nearly a score of government agencies, although 90 per cent related to national defense activities. The biggest item, \$742,462,080, was earmarked for the Navy, and, of this, \$467,046,600 was for new airplanes to the number of 2,236. The balance of the Navy's share was scheduled for ordnance which included guns for air combat.

FURTHER EXPANSION IN SHIP PRODUCTION

The fiscal year 1942 was but seven days old when the Navy Department sought from Congress an authorization of \$585,000,000 for construction facilities to produce more ships under its record program and to expand its service facilities to meet growing requirements. Previous authorizations of \$500,000,000 for these purposes had been allocated. It was proposed to spread the new authorization as follows: for additional shipbuilding facilities at either naval or private establishments, \$300,000,000; for repair facilities at such places, \$160,000,000; and for ordnance manufacturing facilities, \$125,000,000.

The following were listed among tentative estimates for outlays at Navy Yards and bases: New York \$5,000,000; Portsmouth \$4,000,000; Boston \$10,000,000; Philadelphia \$3,000,000; Norfolk \$1,250,000; Charleston \$1,250,000; Mare Island \$5,000,000; Puget Sound \$3,000,000; Pearl Harbor \$20,000,000; New London \$2,000,000; Naval Air Station, Jacksonville \$250,000; San Juan Drydock \$1,250,000; Vieques \$5,000,000; Naval Air Station, Corpus Christi, \$500,000; San Diego destroyer base and San Pedro naval operating base, \$5,000,000; and the Panama Canal Zone, \$2,000,000.

Proposed expenditures in private shipyards were indicated by naval districts as follows: First, \$5,000,000; Third, \$25,000,000; Fourth, \$5,000,000; Fifth, \$10,000,000; Sixth and Seventh, \$6,000,000; Eighth, \$13,000,000; Elev-

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enth, \$7,000,000; Twelfth, \$7,000,000; and Thirteenth, \$7,000,000. Concurrently, a bill was passed by the Senate authorizing the Navy to proceed with several projects, including a \$2,000,000 operation to complete facilities at Newport. Admiral Robinson informed the House Naval Affairs Committee that the repair projects would include construction at the following plants: Todd Shipyard Brooklyn, \$3,450,000; Todd Shipyard Hoboken, N.J. \$5,750,000; Bethlehem Steel Co. Staten Island, N.Y. \$2,787,000; Bethlehem Steel Co. Weehawken or Hoboken, N.J. \$9,409,000; Brewer Dry Dock Co. Staten Island, \$800,000; Sullivan Dry Dock Co. Brooklyn, \$1,804,000; Atlantic Basin Ironworks Brooklyn, \$1,000,000. The New York Navy Yard was allocated \$5,000,000.

Declaring that the defense program on many fronts was moving ahead of schedule and that funds that would have been requested in January 1942 were already necessary, President Roosevelt asked Congress on July 11 for an additional \$2,323,000,000 in cash and \$1,000,000,000 in contract authorizations for the Navy and merchant marine. Of the \$2,323,000,000 requested, the Navy would obtain \$1,625,000,000 in cash and the Maritime Commission \$698,000,000 in cash and \$1,000,000,000 in contract authorizations. Of the Navy's appropriation, \$400,000,000 was to go for repairs and maintenance of defense installations on government and privately owned merchant vessels. In addition to the \$400,000,000 expenditure on ships, the new naval appropriation was earmarked for ordnance, repairs, aviation, and the multiple activities of the sea arm.

SHIP REPAIR AND ORDNANCE FACILITIES

The House Naval Affairs Committee on July 14 approved a Presidential request for \$585,000,000 for expansion for shipbuilding and repair and ordnance manufacturing facilities at more than 50 shore stations. Virtually every naval shore establishment in the United States, its territories, and ocean bases would be improved under

the bill which the House passed on July 17. Lease agreements totalling \$21,504,756 with seven concerns to provide for the repair and conversion of naval vessels were announced by the Federal Loan Agency on July 23. It is understood that the strain on our dry dock facilities by the repair of British war craft, in addition to the ordinary and potential domestic demands on their services, necessitated the expansion sought.

On Aug. 21, the President signed the Naval Works Authorization bill which added about \$225,000,000 of shore and island facilities to support the Navy in any task it may have to perform. He also signed on Aug. 25 the First Supplemental National Defense Appropriation bill of 1942, thereby making available to the Army, Navy, and Maritime Commission more than \$7,500,000,000 in cash and contract authority for urgently needed armament and defense works. For expansion of the Navy's shore facilities and other services, \$1,576,000,000 was provided.

The Navy Department reported on Sept. 3 that in the eight months from Jan. 1, a total of 213 vessels of all classes had been completed or placed in active service. It was added that keels were laid for 436 vessels of all categories, ranging from lowly district craft such as harbor tugs and net tenders to powerful capital ships. These were in addition to other combat-craft including battleships laid down in 1940. During the elapsed period, launchings were represented by one capital ship, one cruiser, eight submarines, eight destroyers, 48 patrol craft, 45 auxiliaries, and 138 district craft, or 249 in all. Completed and/or placed in active service were two battleships, nine submarines, 12 destroyers, 42 patrol craft, 20 auxiliaries, and 128 district craft, or 213 in all. The period had seen an increase from 104 to 127 in the number of ways more than 300 feet in length, and the expenditure of \$85,000,000 on new shipbuilding facilities. The two-ocean navy which will give the United States the greatest fleet ever built by any country reached the point on

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Sept. 16 at which every contract involved had been awarded.

LAUNCHING OF BATTLESHIP MASSACHUSETTS

Mass production of a revolutionary type of light ocean cargo carrier driven by a battery of gasoline engines entered the defense program on Sept. 18. Within a few hours after the Navy Department had disclosed production of one such experimental ship, a government corporation was projected to manufacture them in quantity in Gulf and inland shipyards where they would not interfere with the building of large regular freighters. Cost of construction was to be charged against Lease-Lend funds. It was understood that, as soon as completed and tested, delivery would be made to Great Britain and other allied nations. Seven months ahead of schedule, the 35,000-ton battleship *Massachusetts* was launched on Sept. 23 from the Fore River yard of the Bethlehem Steel Co. Immediately following the launching, a 50-ton crane swung into the vacated ways the first section of the keel of a new cruiser to be known as the *Flint*. Like her sister ships, *North Carolina* and *Washington*, the *Massachusetts* will be propelled by steam turbines of 115,000 horse power and will mount a main battery of nine 16-inch guns in three turrets, also a battery of latest type anti-aircraft and secondary broadside guns. She will be catapult-equipped for airplanes.

WORLD'S LARGEST DRY DOCK

On Oct. 6, the Navy Department announced its early intention to acquire the Hunters Point dry dock of the Bethlehem Steel Co., San Francisco, because of emergency needs on the West Coast for docking and repair facilities for large vessels such as battleships and aircraft carriers. Built after an immense amount of excavation in the marshy land of the Navy's league Island yard, at a cost of \$10,000,000, the world's largest dry dock was on Oct. 11 reported to be ready for the construction of its initial war vessel. Bigger than the Panama Canal locks, this shipway 1,100 feet long and

150 feet wide is understood to be capable of constructing capital ships twice the size of the *Washington* and *North Carolina*.

ELEVEN MONTHS NAVAL GROWTH

Hailed by Secretary Knox as a symbol of the nation's will to survive in a world at war, the 35,000-ton battleship *Indiana* slid into the waters of the James River on Nov. 21 from the ways of the Newport News Shipbuilding and Dry Dock Co. six months ahead of schedule. The *Indiana* is of like class as the *South Dakota* and *Massachusetts* launched in June and September, respectively. Carrying nine 16-inch guns as main weapons of offense, all three vessels were designed to attain at least 27 knots speed.

The Defense Plant Corporation announced Dec. 3, the execution of a contract with the General Electric Co. for construction and installation of a plant at Erie, Pa. to produce naval equipment. On Dec. 3, Secretary of the Navy Knox issued a detailed statement of naval growth during the first eleven months of 1941. This disclosed that in the period the Navy Department commissioned 27 combatant vessels, launched 41 more, and laid the keels for 128. All were ocean-going craft. The commissioned ships included two battleships, one aircraft carrier, 14 destroyers, and ten submarines. Keels were laid for two battleships, three aircraft carriers, 18 cruisers, 80 destroyers, and 25 submarines. In the eleven-month period, contracts had been placed for 5,334 vessels at an estimated cost of \$7,351,497,905. The latter sum included nearly \$1,000,000,000 of expenditure for additional facilities to carry out this program. A floating workshop, one of the Navy Department's latest fleet auxiliary developments, was launched on Dec. 6 from the yard of the Dekom Shipbuilding Corporation, Brooklyn. The new vessel is equipped to effect most types of emergency repairs at sea. Its length is 150 feet, its beam 38 feet and, although not self-propelled, is equipped to generate power for its own repair installation.

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The *YR-27*, the name by which the new craft is known, is replete with carpenter, coppersmith, blacksmith, and other shops, besides approximately \$200,000 worth of modern repair machinery, apparatus, and facilities. A sistership, the *YR-26* was launched on Dec. 27.

While the Senate was passing a \$10,-572,350,705 supplementary defense appropriation, including funds to strengthen the Army and Navy air arms for all-out war with the Axis Powers, the Navy Department asked Congress on Dec. 12 to authorize an increase of 30 per cent in its combat strength through the addition of 166 fighting vessels, including seven or eight 45,000-ton battleships. On Dec. 15, Congress voted the \$10,077,000,000 emergency appropriation for the armed forces and supporting establishments, and sent this record supplemental bill to the White House for the President's signature. The program to increase naval combat tonnage by 30 per cent or 900,000 tons underwent considerable shrinkage in the House on Dec. 15. The Naval Affairs Committee reported out a measure authorizing a 150,000-ton increase which it was estimated would be as much as shipbuilding facilities could absorb and accommodate in 1942. In this 150,000-ton authorization, the Committee left it to the Navy Department to determine without Congressional direction the type of ships that would be built. Representative Vinson indicated, however, that none of the vessels contemplated in the program would be battleships.

The sinking of four of the latter in the battle of the Pacific amid impressive reports of the effectiveness of aerial bombers appears to have aroused Congressional demands for a re-appraisal of the warship-airplane situation. Such an investigation was considered of urgent importance in the light of the foregoing Administration bill. Chairman Walsh of the Senate Naval Affairs Committee, in introducing the legislation at the request of the President and the Navy Department, felt that the vulnerability of battleships to aerial assault un-

doubtedly would have to be threshed out.

BRITISH WAR VESSEL REPAIRS IN U. S. NAVY YARDS

Naval data compiled for the information of Congress indicated that in the three months previous to Feb. 15, the British Navy was reinforced by 20 new combatant ships, the additions, reported by authoritative sources, including seven destroyers, two battleships, two aircraft carriers, and five cruisers. Offsetting the foregoing to some extent, however, was the loss of seven submarines. In the fiscal year ended March 31, Great Britain was credited with completing 480 war vessels of varying size and category.

On March 19, Secretary of the Navy Knox disclosed that Great Britain had asked the United States to undertake the repair of an undisclosed number of war craft. On April 16, he gave out the further information that United States Navy Yards were instructed to give priority to the repair of all British combatant craft. Adequate facilities were available. One British battleship, two aircraft carriers, and four cruisers were among a dozen British ships named officially by the Navy Department on Sept. 19 as being in American ports for repairs or service operations. Secretary Knox made public the list along with a statement that the presence of other ships of the Royal Navy would be announced in the future to a limited extent under an agreement concluded after weeks of negotiation with British officials.

The *Warspite* was at Bremerton, Wash.; the aircraft carriers *Illustrious* and *Formidable* were at the Norfolk Navy Yard; while four cruisers, *Delhi*, *Liverpool*, *Orion*, and *Dido*, were listed as being at Brooklyn and Mare Island Navy Yards. Another vessel, *Asturias*, a "converted cruiser," was at Newport News, Va. The list was completed with the submarine *Pandora* at Portsmouth, N.H.; the *Nasturtium* and *Primrose*, corvettes, at Charleston, S.C.; and the *Menestheus*, described as a vessel similar to our coastal minesweepers, at Baltimore.

Rear Admiral Hepburn, chief of the

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Navy's Public Relations Bureau, indicated at a press conference that the 12 British ships listed as in American ports were by no means the only ones anchored in United States waters, but that the 12 named were those that could be regarded as cleared for publicity. Three British battleships and nine other craft were revealed by the Navy Department on Sept. 19 as having visited American ports and departed after being repaired or serviced. The battleships included the *Malaya* at Brooklyn, the *Resolution* at Philadelphia, and the *Rodney* at Boston. Other departed craft were the auxiliaries *Canton* at Brooklyn, *Southern Prince* and *Bulolo* at Baltimore, and *Montclare* and *Alaunia* at Boston; the corvettes *Tulip* and *Clark* at Charleston, the armed merchant cruiser *Aurania* at Newport News, and the destroyer *Richmond* at Boston. When the British cruiser *Newcastle* put into Boston for repairs on Sept. 27, she marked the 28th British or Free French ships to seek repairs at a United States Navy Yard. The work of repairs has been of necessity somewhat slow, since our Navy Yards do not carry every replacement part required for British ships although these themselves carry a large and varied assortment. The service being rendered the Royal Navy has the great advantage of being free and unlimited. On the other hand, the British have made it abundantly clear that they stand ready to give our ships reciprocal facilities and services at their Singapore and other far-flung bases.

DOCK, REPAIR, FUELING, AND BASE FACILITIES EQUIPMENT

Of necessity, to round out a ship construction and equipment program of the magnitude and scope indicated in this survey, some consideration should be given to other and equally important construction and equipment activities because of their essential contribution toward success of our whole national defense undertaking. Ships and airplanes must have near and far-flung bases, docks, hangars, flying fields, repair and fueling facilities, in addition to defenses

of a more or less substantial nature consistent, of course, with their relative individual importance. With respect to these, the year 1941 registered a consistently accelerating and comparably high degree of performance.

PANAMA CANAL WORK

Work on the third set of locks for the Panama Canal showed substantial progress, a circumstance the more gratifying because of the vital bearing on hemisphere defense that this particular waterway exercises on naval strategy. On March 20, conversion of the Panama Canal from a high level lock "trough" to a sea-level waterway was proposed in a joint resolution in the House by Representative Mansfield of Texas, chairman of the Harbors and Rivers Committee. Primarily, the proposal was offered to insure that the Canal should be made as nearly invulnerable as possible.

Representative Mansfield cited the success of Britain and Germany in keeping open the Suez and Kiel Canals, both sea-level waterways, despite many attacks from the air. The Panama Canal, the highest point of which is 85 feet above sea-level, is specially vulnerable to attack. He held that, with the third set of locks authorized by Congress about mid-year 1940 and expected to be in operation within three years, the Canal could be reduced to sea level without interruption to traffic. In the resolution submitted, the third set of locks feature was embodied. It seems more or less obvious that locks would be vulnerable to bomb hits and that repairs would be both slow and irksome. It was Chairman Mansfield's opinion that, if the pool of the Gatun reservoir should be drained, it could not be restored within the duration of a war. On the other hand, hits on a sea-level canal could only produce more or less bank slides which probably would not involve serious obstruction and could be repaired in a relatively short time.

Early in the spring, the Navy was accumulating at Balboa, C.Z. equipment and supplies needed for the sea-

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plane bases in Central and South America, these being intended to round out the sea defenses of the Pacific side of the Canal Zone. With Balboa as the main base, seaplanes would patrol a wide sweep of the Pacific while submarines and destroyers would cruise within the area to be kept under surveillance of hostile aircraft. In a word, there would be established in the Pacific a protected area similar to that in the Caribbean.

A breakwater on the Atlantic side and the new shore installations on the Pacific side represent the basic naval expansion in our most vital seaway territory. On May 10, a contract was awarded the Panama Constructors Inc. for excavation work required in connection with the third set of locks at the Pacific end. The contract price involved \$22,436,086. Real Admiral Frank H. Sadler, commandant of the Fifteenth Naval District, revealed on June 14 that a naval repair base capable of accommodating "a good part" of the United States Fleet, including the largest battleships, would be established at Balboa. Development of the base was being accomplished through expansion of the Canal Zone's mechanical division which serviced and repaired merchant ships. A unit of the third set of locks will embrace a huge dry dock. President Roosevelt on Nov. 10 asked Congress to appropriate \$104,000,000 for construction purposes at the third set of locks as a project to guard further against stoppage of Canal operations by damage to existing locks.

PUBLIC WORKS PROJECTS IN NAVY YARDS

Activities of the Bureau of Yards and Docks may be sensed from the circumstance that public works projects were more than triple those of 1940 in dollar volume of contracts let, while total expenditures, including maintenance, were nearly six times those of that year. Shipbuilding ways were completed at the Portsmouth, Boston, Charleston, and Mare Island Navy Yards. Battleship ways and destroyer-cruiser ways were completed at the Philadelphia Navy Yard. Ma-

chine shop extensions were completed in the Navy Yards at Boston, Philadelphia, Charleston, and Puget Sound. Of nine new dry docks started, six were of size to accommodate battleships, one will service cruisers, and two were designed to service destroyers and submarines. In addition to normal repairs necessary for proper maintenance of marine railways, several major construction and reconstruction contracts were undertaken during the year.

DEVELOPMENT OF NAVAL AND AIR BASES

Unprecedented expansion of aviation shore facilities took place during 1941. Fourteen naval air stations were commissioned, and establishment of air bases in the Western Hemisphere outside of the United States was initiated consequent to diplomatic negotiations between the United States and Great Britain which culminated in the Agreement of Sept. 2, 1940. The availability of sites for naval and air bases in British territory of the Western Hemisphere constituted in scope and importance an outstanding development in a year of otherwise major undertakings. The locations agreed upon for bases were Argentina, Newfoundland; Antigua, Bermuda, British Guiana, Jamaica, St. Lucia, Trinidad, and Great Exuma Island, Bahamas.

The necessary preliminaries were disposed of so rapidly that work was started on the Argentina project in January. In that month, too, contracts were awarded for construction at Trinidad and British Guiana, and in February for construction at Bermuda, St. Lucia, Antigua and Jamaica. At the year end, substantial progress had been made in equipping all of the bases with the exception of that on Great Exuma Island. This site was not approved until mid-year.

Rapid expansion of air stations in other territory outside the United States also was under way during the year, especially in Alaska and the Pacific Ocean. The new air station at Dutch Harbor, Alaska was commissioned and placed in operation. Both

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East and West Coast air and naval defenses were strengthened tremendously during the 12 months period. According to Rear Admiral J. H. Towers, chief of the Bureau of Aeronautics, the Destroyer-British-Base-Agreement accomplished by the President of the United States during the fiscal year 1941, greatly extended the operating area of naval aircraft, making it possible for patrol planes to keep under surveillance vast off-shore ocean areas, thus extending the outer defenses of the United States far to the east in the Atlantic.

Twelve ships were acquired during the year for the support of naval aircraft. These consisted of three aircraft tenders, one aircraft escort vessel, and eight destroyers that had been converted to patrol-plane-type tenders. The Navy acquired 2,059 complete new airplanes with spare parts during the fiscal year, as compared with only 300 new planes during the previous year.

AIRCRAFT ORDNANCE

In the sphere of ordnance so closely related to all of the foregoing, the lessons of the war abroad made increasingly apparent that, through the technique of close range attack, chiefly dive bombing and glide bombing, aircraft attack had achieved a substantial advantage over anti-aircraft defense. There was accordingly demanded of the latter an intensive program not only for improvement of weapons for this defense but also for their production in large enough quantities to arm both existing and new naval construction as well as to foresee the possible requirements of merchant vessels against this form of at-

tack. The required improvement lay in the direction of increased effectiveness of the relatively light, highly mobile, anti-aircraft machine gun batteries. This resulted in the adoption of anti-aircraft machine guns of substantially increased caliber, hence firing projectiles of greatly increased destructive power while retaining the high degree mobility required of guns for defense against close range attack. Mass production of new weapons, constituting a new venture, gave reasonable promise of complete success notwithstanding that new problems therewith connected called for solution.

SUMMARY

Despite the myriad problems that all departments of naval expansion have had to face and solve, it remains to be said that all units ashore and afloat were being manned and maintained at full complements for the first time since the first World War. Further, and looking to the immediate and more distant future, not only will a like satisfactory condition prevail, but as President Roosevelt has declared, production of armament will be increased as rapidly as possible to a point where 50 per cent of the national income will be expended on the whole war program. He estimates that the national income will reach \$100,000,000,000 in the fiscal year 1942, thus implying the existence of a war budget alone for that period of \$50,000,000,000. At the year end, through negotiation with the French Government, the palatial trans-Atlantic liner *Normandie* was added to the long list of American liners, freighters, yachts, etc. acquired by the Navy Department throughout 1941.

THE INDUSTRIAL ASPECTS OF NATIONAL DEFENSE

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REPORT OF THE UNDER SECRETARY OF WAR

In his annual report for the fiscal year, 1941, Under Secretary of War Robert P. Patterson said:

"The War Department was presented with a procurement problem for the fiscal year 1941 far greater than that of any previous peacetime year. Funds for the procurement of

THE INDUSTRIAL ASPECTS OF NATIONAL DEFENSE

equipment and facilities totaling approximately eleven and a half billions of dollars were provided by Congress in regular military appropriations, to which were added nearly three and a half billions of dollars made available under Defense Aid appropriations, a grand total for the fiscal year of nearly fifteen billions of dollars. Against this amount, orders have been placed from the regularly appropriated funds for more than ten billions of dollars and from the allotted Defense Aid funds for more than two billions, making a total obligation of nearly thirteen billions of dollars. The above amount, which is almost 30 times the total War Department expenditure of approximately \$450,000,000 in the fiscal year, 1939, and almost 20 times the expenditure for the fiscal year, 1940, indicates the degree of expansion that has taken place in the procurement operations of the Department.

"The program for the year was in general directed toward the provision of supplies, equipment and shelter for an army of 1,400,000 men and critical items for 2,800,000 men, together with a greatly-increased airplane program and expanded facilities required for manufacture and storage of the equipment. These obligations were extended, under the Lend-Lease Act, to embrace the procurement of large quantities of equipment and supplies for other nations. The tremendous task thus suddenly imposed upon the Regular Army establishments could not be carried out immediately. Little capacity existed for the production of guns, ammunition and tanks other than the capacity of our arsenals, which was very small in relation to the needs of the greatly expanded Army. Quantity production of modern military airplanes was unknown.

"To procure the items required, it was necessary to provide facilities for the manufacture of a considerable proportion of them. Except for some funds for educational orders, totaling some \$16,000,000 for the fiscal years, 1939 and 1940, and a small amount in the 1940 military appropriation, funds were not available for this program until the beginning of the fiscal year.

The funds then made available for equipment and facilities were, roughly, one and a half billions of dollars late in June, 1940; four billions in September, 1940; slightly over one billion in October, 1940; and about five billions of dollars in April, and approximately three billions of dollars under the Defense Aid Act which became available during May and June.

"The first task was to obligate the funds provided. To place orders aggregating over fourteen billions of dollars is a tremendous undertaking. During the period October through December obligations were entered into at the average rate of one and a quarter billion dollars per month, and during the month of June a total of nearly five billions was obligated. Procurement of airplanes in actual numbers was approximately nine times that of the previous year. Record-breaking orders were placed for items for all arms of the service. A construction program, including facilities and command construction in excess of two billions of dollars, was initiated. New shelter and utilities were provided to care for 1,230,000 troops. Contracts for new manufacturing facilities for aircraft, tanks, ammunition, chemicals and explosives, anti-aircraft, anti-tank, and other artillery weapons and other items were let to the extent of one and a third billions of dollars. More than 1,300 major contracts for aircraft, construction, ordnance materiel and other items, of a total value of over eight and a third billions of dollars, were processed through my office. Orders were placed for large quantities of trucks, tanks and other combat vehicles, field pieces, anti-tank and anti-aircraft guns, small arms and ammunition, artillery shell and bombs, gas masks, searchlights, radio sets for airplanes, tanks and ground use, and other equipment . . .

"In a country like ours the munitions burden must be carried by private industry. The big problem of 1940-41 was the placing of contracts. In less than one year the War Department placed contracts for nearly thirteen billions of dollars. In 1941-42 the

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matter of placing contracts will still be a serious consideration, but the lessons we have learned, the procedures we have established, should facilitate this work considerably. The big problem of 1941-42 is production. Contracts have been let totaling billions of dollars. The wheels of our national defense machinery are turning. They must turn over faster to give America and those countries whose defense we are aiding the munitions they need. This is a great task, and we will carry it out according to American tradition—which means that we must not only equal the records made by industry during the past twelve months, but we must make it our rule to pass them."

SCOPE OF THE PROCUREMENT TASK

These few paragraphs give a brief picture of the tremendous task carried out during 1941 by the Supply Arms and Services of the United States Army. Modern war is a collision of industrial systems. The General Staff, in planning military operations, computes supply requirements in terms of the capacity of American industry to meet them. It is up to the Office of the Under Secretary of War to see that those requirements are met. Its first consideration must always be getting the arms and munitions required in the shortest possible time. Yet this task must be carried out with the voluntary mobilization of industry while the normal needs of the country are met.

Competition is the life of industry as it is of trade, but coordination must be the basic principle of all industry devoted to defense. In every way possible the War Department attempted to secure this coordination. The 52 district field offices maintained by the seven Arms and Services of the United States Army were given the mission of coordinating the nation's facilities, commodities, power, fuel, transportation and labor supply for their fullest use in national defense.

Study of operations in this field indicates to what degree national de-

fense depends upon private industry. It is true that the Government maintained its own ordnance works, its own arsenals, but until they were placed on a mass production basis they were little more than laboratories. During the years after the World War, the art of the armament-maker was kept alive at Springfield, Watertown, Watervliet, Rock Island, Picatinny and Franklin. These plants were the first line of our industrial defense. The engineering in them was excellent. When they were called upon to expand in the present emergency they were able to do so on the basis of long-time ordnance planning. The designs perfected in them were 95 per cent ready to be turned over to private industry for tooling up. When America entered the World War in 1917, designs had to be started for a large proportion of the items required, and the A.E.F. had to depend upon the Allies for many of its weapons.

During the year, 1941, American industry built a far-flung system of national defense upon the basis of the plans and the designs perfected by the seven Arms and Services of the Army. This great national defense structure represents one of the greatest pioneering achievements in the history of the nation.

STANDARDIZATION

At every step the Arms and Services consulted with industry and with technical and engineering authorities, in order to avoid confusion, competition, loss of time, and to simplify the process of industrial mobilization. In agreement with the British, a large number of specifications for armament were revised in order to eliminate differences and to secure designs as nearly basic as possible. This was one of many achievements in the field of standardization.

In the field of motor supply alone, the War Department was able to standardize items from 216 makes of vehicles at the close of the World War to 16 in 1941. The importance of standardization of motor vehicles may well be understood from considera-

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tion of the need for substitution and repair of parts in the theatre of operations. In the Army of 1,500,000 men, approximately 400,000 were trained to be drivers or mechanics of some type of motor vehicle. By October, 1941, quartermaster vehicles in the Army alone numbered 286,000.

DISTRIBUTION OF THE MUNITIONS BURDEN

Plans for industrial mobilization necessarily included an inventory of industrial capacity and apportionment of orders geared to that capacity. Throughout the planning it was necessary to take cognizance of peace-time regulations which required competitive bidding and award to the lowest bidder. It was necessary to compute requirements for basic commodities and to take steps for conservation of strategic and critical materials. One of the most important activities was the distribution of the munitions load as widely as possible without interfering with speed of procurement.

The most advanced industries from the production standpoint were given the first large orders because the consideration of time took precedence above all others. Even to double a plant's output of standard model trucks meant a great adjustment. To convert the production of a plant from trucks to tanks required unavoidable tooling up and an irreducible minimum of time.

A record of industrial capacity based on plant surveys provided a valuable index of existing plants while new facilities were being provided. Proper balance between utilizing existing industry and providing new facilities without interruption to the flow of supplies was maintained. It was always the purpose to hold to a minimum the dislocation of the normal pattern of industry.

Most army contracts were for industrial goods, and therefore most awards were placed in the industrial states. Yet the 12 leading industrial states received a little less than their natural share of army contracts and the load was distributed as widely as possible.

A comparison of indices of contract awards as of June, 1941, with 1937 production, shows that all areas took part in the program in proportion to their capacity.

Federal Reserve District	1937 Production	Contract Awards
Boston	11.8	12.5
New York	20.8	18.5
Philadelphia	8.7	9.8
Cleveland	15.5	5.3
Richmond	3.4	10.0
Atlanta	2.7	4.4
Chicago	24.6	13.0
St. Louis	2.0	4.7
Minneapolis	1.0	.5
Kansas City	1.7	2.5
Dallas	1.7	2.4
San Francisco	6.1	16.4

As the capacity of the strategic areas increased they carried a continually expanding share of the program. Thus an increasingly wider distribution of the munitions load was secured as the program continued.

SUBCONTRACTING

It has been the consistent policy of the War Department to encourage subcontracting by large industry in order to spread the defense load to smaller industry. The principle throughout the plan was that of decentralized control. Control of production was exercised through the district offices. In ordnance alone there were some 1,500 prime contracts in the districts at the close of the 1941 fiscal year, and over 11,000 subcontracts.

For a recent type of light tank, 117 companies cooperated as first subcontractors for the more than 10,000 items which made up the gun mounts and other parts. For two years one large firm farmed out over one-third of its orders for vital aircraft equipment. These are typical examples of a program that has been made possible through the enterprise and initiative of large and small industries alike.

EDUCATIONAL ORDERS

A program of educational orders was maintained in order to familiarize

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industry with munitions and armament requirements. Large plants were given technical advice, and as the program developed they in turn provided technicians to help smaller plants familiarize themselves with requirements. Constant adjustment to the rigidity of government specifications on the part of industry was necessary, and a staff of procurement officers was maintained in the field to make these adjustments as speedy as possible.

From 1940-41 nearly 100 educational orders in Ordnance were given. These were of great value. They gave firms the "know how" of manufacture.

Money as well as time was saved through the educational orders program. The report of the Under Secretary of War for 1941 lists these few examples among many: "In production contracts totaling approximately \$24,000,000, placed by the Chemical Warfare Service as of April 1, it is estimated \$4,000,000 was saved by the use of facilities trained by educational orders.

"One of the Ordnance Department educational order contracts, placed in 1939, called for the machining of 10,000 75 mm. H.E. shells at a price of \$84,000, of which \$50,000 was for jigs and dies which became the property of the Government upon completion of the contract. An order placed in 1940 for 2,000,000 of the items resulted in the saving of over five months in completing the order.

"Similarly the use of educational orders in the initial private manufacture of the Garand rifle saved one year in delivery time and recouped, on the first large-scale orders, approximately \$1,000,000 of the educational order cost of about \$1,200,000.

"The use of the educational orders for conversion and expansion of existing private manufacturing facilities has been of immeasurable value in creating productive capacity for non-commercial military items. The program to date has involved one hundred twenty-five prime contracts distributed in twenty-six states."

PRIORITIES

One of the most difficult problems encountered was the necessity of choosing which weapons should be manufactured first. If America could have all the weapons it needed at a given time there would be no problem. But the urgency of time was paramount and choice was necessary all along the line. Thus the importance of priorities became greater as the urgency of the program increased.

Above everything else the Navy required the ships on its 1941 program. The "Army's Navy" was also at the top of the priorities list—that is, the ships for army transport and supply. Top priority was also given to machine tools—above all, to machine tools for bombers. The supply of heavy bombers was crucial. So was the supply of aircraft armament and ammunition, both for cannon and machine guns. Aircraft of all types was high on the priorities list, but only a step higher than tanks. After them came anti-aircraft and anti-tank arms and ammunition, then harbor and coast defense, then combat vehicles and mechanical equipment, including transport, armored cars, etc. Then came mobile artillery and small arms, from mortars to rifles.

Emphasis was on offensive equipment throughout the program, but every single item in it was important. Every choice made sacrificed an item that was important for one that was critical.

The major agency for securing adjustment of priority problems was the Army and Navy Munitions Board. A Priorities Committee of this Board was established on June 17, 1940, to act as liaison agency in priority control and to compose difficulties arising from adjustment of interests. The activities of the Committee were directed constantly toward expediting production in accordance with the plans of the Chief of Staff and the Chief of Naval Operations. Priority control was also extended over the Civil Aeronautics Administration, Panama Canal, National Advisory Commission for Aeronautics, Coast Guard, Coast and Geodetic Survey,

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and Maritime Commission. The joint interests of the War and Navy Departments were paramount in all plans of the Committee.

STRATEGIC MATERIALS

Although the United States is the most favored nation in the world in natural resources, it has neglected the development of many of them and the conservation of almost all. Thus under the urgency of the defense effort, it was necessary to study the development of critical materials—for example, tungsten, manganese, chrome ore, and potassium. The conservation of existing supplies of aluminum, iron, copper, nickel, zinc, rubber, and silk became of prime importance. The accumulation of stock piles of these critical materials was advanced during 1941, and non-essential uses of critical raw materials were curtailed.

PLANT CONSTRUCTION

A Facilities Board for coordinating activities in munitions plant construction was maintained in the Office of the Under Secretary of War which utilized the service of experts of the Supply Arms and Services, as well as of agencies outside the War Department. In every case when new construction was undertaken, the initial recommendation was made by the Supply Arm or Service concerned.

In all plans for the location of new plants, adjustment had to be made between military considerations and the necessity of meeting the supply requirements of the Army. Military considerations required that new plants wherever possible must be located inland—at least 250 miles from a seacoast and at least 200 miles from the northern or southern border.

While existing plants increased operations, a great westward migration of heavy industry took place during 1941. This was in accordance with the General Staff plan for the strategic location of the munitions industry.

Each one of the munitions plants established was made a part of an organic unit. Each one of these units was made as self-sufficient as possible

from the standpoint of power, fuel, transportation, supply, labor and housing. An acid plant, a smokeless powder plant, an explosive plant, a loading plant, and a fuse and primer plant were located at a convenient distance from each other within each one of these strategic areas. Thus economy, safety, and convenience were served.

CANTONMENT CONSTRUCTION

The cantonment construction program carried out by the Army in less than one year was literally the greatest building project of modern times. The best housing in Army history, together with all facilities including hospital buildings, was provided in less than nine months. Work went forward throughout the winter of 1940-41 in order that all induction dates should be met. Nearly 500,000 workers were employed on this program alone at the peak of construction. The population of some of the camps constructed exceeds the population of the leading city of the state in which they are located. Fort Bragg, for example, has a larger population than Raleigh, the capital of North Carolina. Camp Blanding's population is five times that of Tallahassee, the capital of Florida. Camp Livingston's and Camp Claiborne's combined population about doubles that of Baton Rouge.

SUMMARY

At the close of the year 1940 the nation had little more than a blueprint of its plant site location plan. Two sites had been selected for smokeless powder plants, three for explosive plants, two for loading plants, and one for forging shells. Negotiations for acid plants were still under way.

By mid-November, 1941, 28 new munitions plants had been constructed under War Department contracts and were in operation turning out smokeless powder, TNT, DNT, small arms ammunition, tetryl, anhydrous ammonia, ammonium nitrate, toluol, machine guns, armor plate, tanks,

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shells, bombs and chemicals. Twenty-eight more new plants were largely completed.

A certain amount of disruption of peace-time industry was inevitable in launching the national defense program. The induction into service of an army of over 1,500,000 men naturally had a profound effect upon the labor supply. But the program which in less than one year clothed, housed, and fed this army was conducted within the pattern of normal peace-time production. That army was equipped with all the basic weapons. It carried out the greatest maneuvers in the peace-time history of any nation. It was lacking in many of the weapons for combat teams; it did not have its complement of tanks,

anti-aircraft, mortars, and radio equipment; but these larger and more complicated items were in mass production at the close of the year.

Every effort of the Office of the Under Secretary of War during 1941 was bent toward the orderly and speedy process of getting munitions out of the mills and into the theater of operations.

Our Navy was already the most powerful in the world. Our Army was still being built. But its equipment was going to it in ever-increasing quantities. Throughout the program the one overmastering consideration was to maintain a balance of all factors involved so that there would be a maximum supply to the military machine.

ADMINISTRATION OF VETERANS AFFAIRS

By FRANK T. HINES

BRIGADIER GENERAL U.S.A.; ADMINISTRATOR, VETERANS ADMINISTRATION

ORGANIZATION

As of June 30, 1941, the organization of the Veterans' Administration consisted of the following officers: Frank T. Hines, Administrator of Veterans Affairs; Adelbert D. Hiller, Executive Assistant to the Administrator; Harold W. Breining, Assistant Administrator in charge of finance and insurance; Omer W. Clark, Assistant Administrator in charge of pensions and compensations; George E. Ijams, Assistant Administrator in charge of medical and domiciliary care and treatment, construction and supplies; Edward E. Odom, Solicitor in charge of legal activities; and Robert L. Jarnigan, Chairman of the Board of Veterans' Appeals.

ADJUSTED COMPENSATION

Work under the World War Adjusted Compensation Act, approved May 19, 1924, has been practically completed. As of June 30, 1941, benefits had been extended to 4,121,543 veterans of the World War (1917-18), or the dependents of deceased veterans, approximating \$3,766,840,087 in

value. Adjusted service certificates had been issued to 3,792,509 veterans and cash payments totaling \$55,067,180 had been made in 329,034 cases. Awards had been made on 242,414 adjusted service certificates which had matured by the subsequent death of the veteran, the face value of which approximated \$238,871,780. As of June 30, 1941, 3,513,248 applications had been certified for payment under the Adjusted Compensation Payment Act, Jan. 27, 1936. The amount certified for payment totaled \$1,922,574,962 while the maturity value of these certificates approximated \$3,437,770,885.

INSURANCE

The United States Government life insurance fund is a trust fund administered by the Government as trustee for the sole benefit of the policyholders. The Government derives no profit whatever from the administration of this fund as it may be used only for the payment of claims under United States Government life insurance contracts and as dividends to the policyholders themselves. All pre-

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miums paid by the policyholders, all interest received from policy loans, investments, etc. are covered into this fund in the United States Treasury.

As of June 30, 1941, there were in force 613,320 Government life insurance policies aggregating \$2,567,154,350 of insurance. Monthly payments, averaging \$35.47, were being made to 10,626 policyholders for permanent and total disabilities. During the fiscal year ended June 30, 1941, there were issued 32,400 new policies aggregating \$102,962,953. The actual disbursements made from this fund during the fiscal year, 1941 were \$55,826,658.44.

Yearly renewable term insurance was granted to all veterans of the World War who made application for this form of benefit within 120 days after induction into service. The amount of term insurance was limited to \$10,000 for each veteran. Monthly payments on term insurance policies are based on \$5.75 per \$1,000 of insurance in force at such time an award for disability or death is made. As of June 30, 1941, monthly payments were being made to 10,205 permanently and totally disabled veterans and to the beneficiaries of 8,586 deceased veterans. An analysis of the disabilities for which term insurance was being paid shows 53.4 per cent for neuropsychiatric diseases; 20.81 per cent for tuberculosis, and 25.79 per cent for general medical and surgical conditions.

Automatic insurance was granted to those veterans of the World War who were disabled or who died within 120 days after being inducted into service and before application for term insurance was made. The amount of automatic insurance was limited to \$5,000. As of June 30, 1941, monthly payments were being made to 240 veterans and the beneficiaries of 45 deceased veterans. These payments are fixed by law at \$25 per month.

The total disbursements for term and automatic insurance during the fiscal year, 1941 were \$15,390,559.61.

The National Service Life Insurance Act (Public No. 801, 76th Congress) approved Oct. 8, 1940, authorized the

issue of a new type of insurance to certain persons then in the active service of land and naval forces (including Coast Guard) and those thereafter entering on active duty, including persons inducted under the Selective Training and Service Act of 1940. The insurance was available to those persons then on active duty, if in good health, upon application made within 120 days from the date of the approval of the Act. As to those who entered service after that date, application must be made within 120 days from date of entry into service. This insurance is limited to \$10,000 for each veteran and is payable only in the event of the death of the insured while the policy is in force. During the period Oct. 8, 1940 to June 30, 1941, 367,923 applications aggregating \$1,193,665,500 of insurance had been approved. A total of 102 death claims had been filed and awards made in 43 of these cases with a value of \$237,500 of insurance.

Public No. 861, 76th Congress, an act to promote and strengthen the national defense by suspending enforcement of certain civil liabilities of certain persons serving in the military and naval establishments, including the Coast Guard, was approved Oct. 17, 1940. Article IV of the Act provides that the Government will, on application by the insured, guarantee to commercial insurance companies premiums on insurance carried with such companies by persons in active service. Through June 30, 1941, 10,135 applications for insurance benefits under this Act had been received, of which 6,718 representing \$20,015,076.02 of insurance had been approved and 1,611 representing \$3,865,239.58 of insurance had been disapproved. Certificates issued to insurers guaranteeing premiums totaled 188 in an aggregate amount of \$163,239.56.

GUARDIANSHIP

The Veterans' Administration maintains a close supervision of all guardianship activities for incompetent veterans and minor beneficiaries. An effort has been made to utilize so far as possible the services of relatives

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as guardians of the person and the services of banks and trust companies as guardians of the estate of wards. As of June 30, 1941, the total guardianship load was 83,439 wards of whom 43,476 were incompetents and 39,963 minors. The value of estates of all wards approximated \$159,370,982.23, most of which was legally invested or deposited in banks protected by Federal Deposit Insurance.

HONOR ROLL—YELLOW FEVER EXPERIMENTS

Veterans.—Public No. 868, 70th Congress, approved Feb. 28, 1929, recognized the high public service rendered by Major Walter Reed and those associated with him in the discovery of the cause and means of transmission of yellow fever. This Act, in addition to establishing a roll of honor, granting medals, etc., authorized a monthly payment of \$125 to each of 17 designated persons during the remainder of their lives. As of June 30, 1941, 10 persons were receiving this benefit. The disbursements for this type of benefit during the fiscal year totaled \$15,000.

REVOLUTIONARY WAR PENSIONS

Veterans.—The last veteran pensioner of the Revolutionary War was Daniel F. Bakeman who died at Freedom, N. Y., April 5, 1869, at the age of 109 years.

Deceased Veterans.—The last widow of a veteran of this war to receive pension was Esther S. Damon of Plymouth County, Vt. Mrs. Damon died Nov. 11, 1906 at the age of 92 years.

WAR OF 1812

Veterans.—Hiram Cronk, the last veteran pensioner of the War of 1812, died May 13, 1905, at Ava, N. Y., at the age of 105 years.

Deceased Veterans.—The last widow of a veteran of this war to receive pension was Caroline King of Cheektowaga, N. Y. Mrs. King died June 28, 1938 at the age of 89 years.

Surviving Pensioner.—As of June 30, 1941, the sole remaining pensioner of the War of 1812 was Ethel Ann Hill

Morgan of Independence, Ore., a dependent daughter of John Hill, deceased, private in Clark's and McCumber's Companies, New York Militia. Mrs. Morgan was born March 9, 1857 and receives \$20 a month by a special act of Congress.

MEXICAN WAR

Veterans.—The War with Mexico ended May 30, 1848. The last veteran pensioner of this war was Owen Thomas Edgar, an apprentice on board the U. S. S. *Potomac*, *Experiment*, *Pennsylvania*, and *Alleghany*, U. S. Navy. Mr. Edgar died Sept. 3, 1929 at Washington, D. C., age 98 years.

Deceased Veterans.—On June 30, 1941, pensions were being paid to 107 widows of Mexican War veterans. This represents a decrease of 23 in the number of dependents on the roll as of June 30, 1940. The disbursements made during the fiscal year 1941 totaled \$65,772.33.

INDIAN WARS

Veterans.—On June 30, 1941, pensions were being paid to 1,955 veterans on account of Indian War service. This number represents a decrease of 261 veterans on the roll during the fiscal period. The average age of the 1,955 veterans was 81 years. Disbursements for veteran pensioners of the Indian Wars during the fiscal year 1941 totaled \$1,504,114.43.

Deceased Veterans.—As of June 30, 1941, pensions were being paid to the dependents of 3,836 deceased veterans of Indian Wars. The number of dependents totaled 3,876, classified as follows: 3,798 widows, 68 children, and 10 others. The disbursements for dependents of Indian War veterans during the fiscal year, 1941 totaled \$1,404,348.46

CIVIL WAR

Veterans.—Out of a total of 2,213,365 that served in the Union forces in the Civil War which terminated 76 years ago, pensions were being paid to 1,560 veterans on June 30, 1941. The average age for this group of veterans was 96 years. During the

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fiscal year, 1941, the number on the pension roll for Civil War veterans decreased 821. The disbursements during this fiscal period for Civil War veterans totaled \$2,049,976.78.

Deceased Veterans.—On June 30, 1941, pensions were being paid to the dependents of 43,313 deceased veterans of the Civil War as compared with 50,141 on June 30, 1940. These dependents totaled 43,490 classified as follows: 41,279 widows and remarried widows, and 2,211 children. Of the 43,313 death cases there were 5,651 cases in which the monthly payment was \$30, 32,638 cases in which the beneficiary received \$40 per month as provided by law for widows of the attained age of 70 years, 345 cases in which \$50 per month was being paid to widows who were wives of veterans during their Civil War service, 3,817 cases in which the dependents received pensions by special acts of Congress, and 862 cases in which the dependents were paid under general laws and service laws at miscellaneous rates because of the death of the veteran from causes due to military service. The disbursements for dependents of deceased veterans of the Civil War during the fiscal year, 1941 totaled \$21,123,490.17.

SPANISH AMERICAN WAR

Veterans.—On June 30, 1941, pensions were being paid to 153,072 veterans of the Spanish American War. Of this number, 151,497 were receiving pensions for disabilities of non-service origin or for age; 1,497 for service-connected disabilities, and 78 were special act cases. A study of the age of these pensioners shows that 80 per cent were between the ages of 60 and 70 as of the above date. The number of veterans on the roll decreased 6,158 during the fiscal year 1941. The disbursements for pensions to Spanish American War veterans during the fiscal period amounted to \$105,273,998.31.

Deceased Veterans.—As of June 30, 1941, pensions were being paid to the dependents of 60,555 deceased veterans of the Spanish American War as compared with 57,720 on June

30, 1940. Of the 60,555 death cases, 1,302 were service-connected, 59,200 non-service-connected, and 53 special act cases. The number of dependents involved totaled 65,497 classified as follows: 58,237 widows, 6,954 children, 297 parents, and nine others. During the fiscal year, 1941, \$22,083,084.89 was paid in pensions to dependents of Spanish American War veterans.

REGULAR ESTABLISHMENT

Veterans.—As of June 30, 1941, the number of veterans receiving pensions as a result of disabilities incurred in service in time of peace totaled 37,520 as compared with 36,051 on June 30, 1940. The disbursements for this class of pensioners during the fiscal year, 1941 totaled \$14,382,840.09.

Deceased Veterans.—On June 30, 1941, pensions were being paid to the dependents of 10,860 deceased veterans where death of the veteran was determined to be the result of disease or injury originating in line of duty in the military or naval service in time of peace. There was an increase of 734 death cases during the fiscal year, 1941. The number of dependents receiving pensions as of June 30, 1941 totaled 17,032, consisting of 5,837 widows, 5,892 children, 5,295 parents, and eight others. The disbursements for pensions to dependents of deceased veterans of the Regular Establishment during the fiscal year, 1941 totaled \$3,286,452.75.

WORLD WAR (1917-18)

Veterans, Service Connected.—During the fiscal year, 1941, the number of veterans receiving compensation for disabilities directly or presumptively connected with service during the World War increased from 348,164 to 349,724. An analysis of the major disabilities of service-connected veterans on the pension roll June 30, 1941 shows that 19.7 per cent were neuropsychiatric diseases, 15.4 per cent were tubercular ailments, and 64.9 per cent were general medical and surgical conditions. During the fiscal year, 1941, \$169,142,735.47 was paid in compensation to service connected World War veterans.

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Veterans, Nonservice Connected.

—As of June 30, 1941, pensions were being paid to 72,478 totally disabled World War veterans whose disabilities were not of service origin. This number shows an increase of 12,182 in the pension roll during the fiscal year, 1941. Of the 72,478 veterans, 1.39 per cent were over 68 years of age, 3.47 per cent were over 62 years of age, and 9.02 per cent were over 55 years of age. The disbursements during the fiscal year, 1941 for pensions to nonservice connected World War veterans totaled \$23,418,546.58.

Emergency Officers.—As of June 30, 1941, 2,660 Emergency Officers of the World War were entitled to receive retirement pay, of whom 2,581 were receiving full pay and 36 were receiving partial pay. Of the partial payment group, 18 were due to the beneficiary being an enlisted man of the Regular Army, and 18 were due to the application of section 212 of Public No. 212, 72nd Congress, approved June 30, 1932, which provided that in case the salary of any retired officer (except those whose disability was incurred in combat with an enemy of the United States) in the employ of the Federal Government together with the retirement pay exceeds \$3,000 per annum, the retirement pay should be reduced or discontinued so that the sum of the two shall not exceed \$3,000. Of the remaining 43 eligible cases, complete forfeitures were made for the following reasons: 32 were due to section 212 cited above; three were in active duty in the National Guard and eight were incompetent—estate over \$1,500. The disbursements for Emergency Officers retirement pay during the fiscal year, 1941 totaled \$4,114,971.80. Of the 2,660 Emergency Officers entitled to retirement pay on June 30, 1941, 2,575 served in the Army, 70 in the Navy, and 15 in the Marine Corps.

Deceased Veterans, Service Connected.—On June 30, 1941, compensation was being paid to the dependents of 96,833 veterans who died in service or as a result of diseases or injuries incurred in service during the World War. These dependents totaled 137,-

038 and were classified as follows: 30,509 widows, 29,267 children, and 77,262 parents. An analysis of the principal causes of death of service connected World War veterans whose dependents were receiving benefits as of June 30, 1941, disclosed that 30 per cent were tubercular ailments, 25 per cent were injuries, principally wounds in action, and 24 per cent were diseases of the respiratory system other than tuberculosis. A further study reveals that in 30 per cent of these death cases, death occurred on or prior to July 2, 1921, the official ending date of the World War. The disbursements for service-connected death compensation during the fiscal year, 1941 totaled \$55,458,891.49.

Deceased Veterans, Nonservice Connected.—The Act of June 28, 1934, as amended by Public No. 514, 75th Congress, May 13, 1938, authorized the payment of compensation to the widows and children of World War veterans in those cases in which the veteran died of a cause not connected with service while receiving compensation for a service connected disability rated 10 per cent or more. On June 30, 1941, compensation was being paid to the dependents of 22,010 deceased World War veterans, nonservice connected. These dependents were classified as follows: 18,728 widows and 30,741 children. The disbursements for this purpose during the fiscal year 1941 totaled \$9,804,489.21.

GRAND TOTAL—PENSIONS AND COMPENSATION

The table next page shows the number on the rolls as of June 30, 1941 and the net disbursements during the fiscal year, 1941 from the appropriations "Army and Navy Pensions."

HOSPITALIZATION

On June 30, 1941, the hospital load of the Veterans Administration was 58,417. Of this number 58,160 were United States veterans classified by service as follows: World War, 52,088; Spanish American War, 2,992; Civil War, 15; all other wars, expeditions and occupations, 66; and Regular Establishment, 2,999. Other hospital pa-

ADMINISTRATION OF VETERANS AFFAIRS

War	On Roll June 30, 1941	Disbursements Fiscal Year 1941
Honor Roll—Yellow Fever Experiments		
Living veterans.....	10	\$ 15,000.00
War of 1812		
Deceased veterans.....	1	240.00
Mexican War		
Deceased veterans.....	107	65,722.33
Indian Wars—Total.....	5,791	2,908,462.89
Living veterans.....	1,955	1,504,114.43
Deceased veterans.....	3,836	1,404,348.46
Civil War—Total.....	44,873	23,173,466.95
Living veterans.....	1,560	2,049,976.78
Deceased veterans.....	43,313	21,123,490.17
Spanish American War—Total.....	213,627	127,357,083.20
Living veterans.....	153,072	105,273,998.31
Deceased veterans.....	60,555	22,083,084.89
Regular Establishment—Total.....	43,380	17,669,292.84
Living veterans.....	37,520	14,382,840.09
Deceased veterans.....	10,860	3,286,452.75
World War—Total.....	543,662	261,939,634.55
Living veterans.....	424,819	196,676,253.85
Service connected.....	349,724	169,142,735.47
Nonservice connected.....	72,478	23,418,546.58
Emergency Officers.....	2,617	4,114,971.80
Deceased veterans.....	118,843	65,263,380.70
Service connected.....	96,833	55,455,891.49
Nonservice connected.....	22,010	9,804,489.21
Grand Total—Pensions and Compensation.....	856,451	\$433,128,952.76
Living veterans.....	618,936	319,902,183.46
Deceased veterans.....	237,515	113,226,769.30

tients included 38 allied veterans of the World War, 99 employees of the Civilian Conservation Corps and Works Progress Administration, and 120 miscellaneous beneficiaries. Of the 58,160 United States veterans 78.53 per cent were receiving treatment for disabilities not of service origin. There were 54,598 United States veterans in facilities controlled by the Veterans Administration, 2,531 in other Government hospitals, and 1,031 in state or civil institutions. Over 67 per cent of the United States veterans in all hospitals were receiving treatment in facilities located in the state of their reported home address.

The admissions during the fiscal year, 1941 were the highest of any fiscal year to date. These admissions included 187,374 United States veterans, 134 allied veterans of the World War, 1,481 employees of the Civilian Conservation Corps and Works Progress Administration, and 2,756 miscellaneous beneficiaries. Of the 187,374 United States veterans, admissions were authorized for 9,716 for observation and treatment of tuberculosis,

9,723 psychotic or mental diseases, 14,124 for other neurological disorders, and 153,811 for general medical and surgical conditions.

During the fiscal year, 1941, 246,777 United States veterans were under hospitalization. Of this number, 188,617 were discharged after an average of 73.8 in-patient days. Patients who remained until the completion of treatment numbered 154,735 or 28.04 per cent of the total discharges. Approximately 81 per cent of the United States veterans discharged during this fiscal period had been under treatment for general medical or surgical conditions, 14 per cent for neuropsychiatric diseases, and 5 per cent for tuberculosis.

DOMICILIARY CARE

At the close of the fiscal year, 1941 the veteran population reported as present in domiciliary status in facilities under the control and jurisdiction of the Veterans Administration totaled 13,978. The percentage distribution of the above veteran patients by wars were: World War, 91.87 per

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cent; Spanish American War, 4.96 per cent; other wars, expeditions, and occupations, .10 per cent; and peacetime service in the Regular Establishment, 3.07 per cent. An analysis of the causes of disabilities of these veterans shows 9,151 to be general medical and surgical conditions; 4,588, neuropsychiatric diseases; and 239 tubercular ailments. Approximately four-fifths of the domiciled veterans on June 30, 1941 were under care in facilities located in California, Kansas, New York, Ohio, Tennessee, Virginia, and Wisconsin. The approximate average age of the veterans of each of the major wars who were present in domiciliary status at the close of the fiscal period was as follows: Spanish American War, 66 years; and World War, 48 years.

During the fiscal year, 1941, there were 30,201 veterans admitted for domiciliary care. Of this number 27,532 or 91 per cent had served in the World War, and 1,612 or 5 per cent in the Spanish American War. Approximately 93 per cent of the admissions were for disabilities not of service origin. Of the veterans admitted for domiciliary care during this period 70 per cent were disabled by general medical and surgical conditions, 28 per cent by neuropsychiatric diseases, and 2 per cent by tubercular ailments.

During the fiscal year, 1941, 31,991 veterans were discharged after an average of 6 2/5 months' domiciliary care. Deaths among domiciled veterans during the fiscal year, 1941 totaled 97, the principal causes of which were diseases of coronary arteries and angina pectoris, diseases of the myocardium, and syphilis, which collectively were responsible for 64 per cent of the deaths.

In conformity with the act of Aug. 27, 1888 (U.S.C., title 24, Sec. 134), as amended by Public No. 250, 76th Congress, approved Aug. 1, 1939, the Federal Government is required to reimburse state or territorial homes for disabled soldiers at the rate of \$240 per year for each person domiciled therein who is eligible for similar care in facilities controlled by

the Veterans Administration. During the fiscal year 1941, an average of 5,966 such persons was cared for in these homes, thereby creating an obligation of over \$1,431,840 on the part of the Federal Government.

DENTAL CARE

During the fiscal year, 1941, dental care was provided for 32,300 hospital patients, 11,011 domiciliary members, and 3,584 out-patients in clinics maintained by the Veterans Administration, at an annual cost of \$1,033,269. Had these services been secured through the medium of private practitioners, the cost would have approximated \$1,846,266. During this fiscal period, 35,227 artificial dentures were made and 8,660 repaired in dental clinics of the Veterans Administration. Dental treatment was authorized to private practitioners for 1,876 veterans, at a cost of \$75,900 during the same period.

OUT-PATIENT EXAMINATIONS AND TREATMENTS

During the fiscal year, 1941, there were 1,111,589 physical examinations for out-patient purposes made in field facilities. Of these examinations 98 per cent were medical and 2 per cent dental. Treatments furnished during the year for out-patient purposes totaled 1,176,658, 91 per cent of which were medical and 9 per cent dental.

CIVILIAN CONSERVATION CORPS

The total authorized strength of the veterans contingent of the Civilian Conservation Corps is 27,200, which represents approximately 9 per cent of the Corps strength. As of June 30, 1941, there were 20,200 veterans in enrollment status. There have been approximately 213,000 enrollments in the veterans' contingent of the Corps since the spring of 1933. The total number of veterans and their dependents who have received direct monetary benefits through allotments approximates 550,000.

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COOPERATIVE EMPLOYMENT ACTIVITIES

The Veterans Administration maintains personal contact with local representatives of the United States Employment Service of the Social Security Board, and with other government agencies in regard to employment of veterans. Employment Service reports show that on June 30, 1941 there were 212,984 unemployed

veterans registered for employment as compared with 239,872 on June 30, 1940.

FINANCE

During the fiscal year 1941, the total net disbursements made by the Veterans Administration from all appropriations and trust funds (including adjustments on lapsed appropriations) were as follows:

Purpose	Disbursements
Salaries and Expense ¹	\$ 99,406,748.86
Printing and binding.....	134,734.91
Public Works Administration Act of 1938 (allotment to Veterans Administration, 1938-1941).....	1,115,911.65
Hospital and domiciliary facilities and services Veterans Administration.....	3,425,168.22
Army and Navy pensions.....	433,128,952.76
Military and naval insurance.....	15,390,559.61
United States Government life insurance fund.....	55,826,658.44 ¹
National Service life insurance.....	7,055.28
Adjusted service certificate fund.....	2,656,735.71
Adjusted service and dependent pay.....	399,566.38
Vocational training.....	-3,646.83 ²
Allotments and allowances.....	-1,365.18 ²
General post fund.....	37,903.71
Funds due incompetent beneficiaries.....	350,275.79
Personal funds of patients, Veterans Administration.....	2,465,841.86
Miscellaneous.....	16,310.07
Total.....	\$614,357,411.24

¹ Includes encumbrances.

² Credits.

³ Includes \$1,320,501.22 net disbursements made to other government agencies for care and treatment of Veterans Administration beneficiaries.

WATERWAYS AND HARBORS

BY EUGENE REYBOLD

MAJOR GENERAL, U.S.A.; CHIEF OF ENGINEERS, WAR DEPARTMENT

INLAND WATERWAYS

The principal inland navigable waterways are the Great Lakes; New York State Canal system; Mississippi River system, embracing the Mississippi, Ohio, Illinois Waterway to Chicago, Missouri, Tennessee, Monongahela, Allegheny, Kanawha, Arkansas and Red Rivers, and other streams; the rivers of the Atlantic Coast, and the Intracoastal Waterway connecting these rivers; Gulf Intracoastal Waterway from St. Marks River in Florida, *via* Mobile, New Orleans, and Galveston, down the Texas Coast to Corpus Christi, connecting with streams of southern Georgia, Alabama, Mississippi, Loui-

siana, and Texas, and with the Mississippi River system; San Joaquin-Sacramento system in California; Columbia River in the northwest; and the smaller Pacific Coast rivers.

The Great Lakes have natural deep water except in the connecting channels, these channels having been artificially deepened where necessary to accommodate vessels with draft of 24 feet, and with the Welland Ship Canal joining Lake Erie and Lake Ontario, as improved by Canada, afford passage for vessels having drafts ranging up to 23.5 feet. The more important harbors on the Great Lakes accommodate vessels with drafts of 22 and 24 feet. The 12-foot New York State

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Barge Canal is being deepened to 14 feet between the Hudson River and Lake Ontario at Oswego.

The Atlantic Intracoastal Waterway extends from New England to Florida and follows a route through the coastal sounds, bays and rivers, various canals, and reaches of open waters. The Cape Cod Canal, a link of the waterway, has an authorized depth of 32 feet at mean low water and minimum width of 500 feet. Between the Delaware River and Chesapeake Bay, a sea-level channel following the Chesapeake and Delaware Canal has an authorized depth of 27 feet. The Intracoastal Waterway, leading southward from Chesapeake Bay at Norfolk, Va., has been completed to project depths of not less than 12 feet to the St. Johns River, Fla. Along the Florida Coast the waterway has depths of eight feet to Miami and seven feet in the 63-mile section below to Key Largo. The Okeechobee Cross-Florida Canal provides a minimum depth of six feet. On the Gulf Coast, projects have been adopted to provide an Intracoastal Waterway not less than nine feet in depth from St. Marks River, Fla., to Corpus Christi, Tex., more than 1,000 miles, and this depth is in general available from Carrabelle, Fla., (54 water miles southwest of St. Marks) to Freeport Harbor, Tex., (162 water miles northeasterly of Corpus Christi). Dredging of the waterway extending southwest of Freeport is in progress. The Mississippi has a nine-foot depth from Baton Rouge to St. Louis, and thence by a series of 26 locks and dams a channel of like depth to Minneapolis, except for the Chain of Rocks reach at St. Louis where lesser depths prevail at low water.

IMPROVEMENT OF NEW WATERWAY PROJECTS

At the close of the fiscal year, 1941, there were approximately 1,000 authorized river and harbor projects in force, active operations having been carried out on 377 of these projects, and 20 were completed during the year. There were also some 485 flood-

control projects which had been authorized by Congress.

MISSISSIPPI RIVER SYSTEM

The Mississippi River navigation system comprises several thousand miles of connecting channels, the improvement of which has involved the construction of locks and dams and contraction works consisting of dikes and revetments to regulate stream flow and stabilize channel alignment. Also, reservoir construction and periodic dredging through recurring river bars have been undertaken to improve navigation. The authorized channel depths at ordinary low water in the Mississippi River and its principal tributaries, upon which improvement has been completed or is in progress and well advanced to completion, are:

Mississippi River, 35 feet from the Gulf of Mexico to Baton Rouge, La., thence nine feet to St. Paul and Minneapolis, Minn.; Missouri River, six feet to Sioux City, Iowa; Ohio River, nine feet to Pittsburgh, Pa.; Illinois River, nine feet to Chicago, Ill.; Tennessee River, nine feet to Knoxville, Tenn.; Cumberland River, six feet to a point some 130 miles above Nashville, Tenn.; Monongahela River, nine feet (controlling depth) to Point Marion, Pa., and thence seven feet to Fairmont, W. Va.; Allegheny River, nine feet to East Brady, Pa.; Kanawha River, nine feet to Kanawha Falls, W. Va.; Little Kanawha River, four feet to Creston, W. Va.; Muskingum River, 4½ feet to vicinity of Dresden, O.; Big Sandy River, six feet to above Louisa, Ky.; Kentucky River, six feet to Beattyville, Ky.; Green and Barren Rivers, four feet to Bowling Green, Ky.; Arkansas River, clearing of channel in lower 465 miles; Ouachita River, 6½ feet to Camden, Ark.; White River, clearing channel of obstructions to Batesville, Ark.; Red River, clearing of obstructions to Fulton, Ark.; Black River, clearing of obstructions to Poplar Bluff, Ark.; Current River, clearing of obstructions to Van Buren,

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Mo.; St. Francis River, clearing of obstructions to Marked Tree, Ark.; and Wolf River, nine feet at Memphis, Tenn.

The Fort Peck Dam on the Missouri River in Montana is also included in the Mississippi system. Construction of this dam, of unprecedented dimensions, is now practically completed. The reservoir of some 20,000,000 acre feet capacity is in operation, thus permitting the regulation of stream flow for navigation and other purposes. Water has been released from the reservoir during low water periods of the past year for the benefit of navigation on the Missouri and middle Mississippi rivers. Facilities to develop hydroelectric power (50,000 kilowatts initially) are being installed, as authorized by Congress.

SAN JOAQUIN-SACRAMENTO SYSTEM

The improved channels in Suisun Bay, San Joaquin and Sacramento Rivers, tributary to San Francisco Bay, now provide depths of 30 feet to Stockton on the San Joaquin and 10 feet to the City of Sacramento on the Sacramento River. These channels and their improved tributaries support a substantial annual water-borne commerce.

COLUMBIA RIVER SYSTEM

Improvement of the Columbia River for navigation has involved, in addition to dredging and channel contraction works, the construction of jetties, monumental in character, at the entrance from the Pacific Ocean, and construction of the Bonneville Dam, 42 miles east of Portland, Ore. The jetties, completed more than 20 years ago, have proved eminently successful in maintaining a safe deep-water channel through the exposed ocean bar. Bonneville Dam, with its ship lock, completed in 1938, and with channel deepening now in progress in the river below to Vancouver, will provide for extension of deep-draft navigation to The Dalles, Ore., 45 miles above Bonneville and 188

miles above the Pacific Ocean. The Columbia River projects provide for depths of not less than 40 feet at the mouth, 35 feet to Portland, 30 feet to Vancouver, 27 feet to Bonneville, and thence to The Dalles, and seven feet above The Dalles to Wallula. The ship lock at Bonneville has an unprecedented lift of 66 feet at extreme low water, while facilities for the safe passage of salmon and other migratory fish to and from the spawning grounds in the river above the dam constitute an outstanding accomplishment in fishway design. Of the ultimate power installation of 10 units having a total capacity of 518,400 kilowatts, five units having a total capacity of 248,400 kilowatts are now completed and in operation. Work on the remaining five units of 54,000 kilowatts capacity each, as requested by the Bonneville Power Administrator, is now under way.

MISSISSIPPI RIVER FLOOD CONTROL

The flood control project for the Mississippi River in its alluvial valley and for its improvement from the Head of Passes to Cape Girardeau, Mo., was adopted by the Act of May 15, 1928, and amended by the acts of June 15, 1936, June 28, 1938, and Aug. 18, 1941. The total authorization for the adopted project, as amended, is \$662,982,000, of which \$442,000,000 has been appropriated and expended or scheduled for expenditure before the next appropriation becomes available.

The amendments retain the general purposes and the completed features of the 1928 act, and authorized extension of flood control work in the alluvial valley of the Mississippi River from Cape Girardeau, Mo., to the Gulf of Mexico, including the St. Francis, Yazoo, Tensas, and Atchafalaya Basins, as well as the alluvial lands around Lake Pontchartrain, for protection against the maximum predicted flood. North of the Red River, floods will be confined generally to the main leveed channel; however, a limited area in the St. Francis Basin

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and the city of Cairo, Ill. are given additional protection by the New Madrid Floodway. South of the Red River, flood waters, in excess of what the leveed channel of the river will carry safely, will find their way to the Gulf through the Atchafalaya River and floodways located in the lowlands of the Atchafalaya Basin. New Orleans is given additional protection by the Bonnet Carre Spillway, emptying into Lake Pontchartrain, a few miles above the city. In addition to levee work, the project includes construction of revetments and regulating works to prevent bank caving and to stabilize the channel in the interest of navigation.

The project as amended abandons the proposed Boeuf and Eudora floodways through the Macon Basin and abandons the proposed back protection levee extending from the head of the Eudora floodway north to the Arkansas River. South of the Red River it provides for construction of the Morganza floodway extending from the Mississippi River north of Morganza into the Atchafalaya floodway south of Krotz Springs and for the improvement of the discharge capacity of the Atchafalaya River and of its outlets, as well as the construction of an additional outlet from the Atchafalaya Basin to the Gulf of Mexico, *via* Wax Lake, La.

NATIONAL FLOOD CONTROL

A definite flood control policy providing for the construction of economically justified flood control projects throughout the United States by the Federal Government in cooperation with the states, political subdivisions thereof, or other local interests, was established by the Flood Control Act approved June 22, 1936. That Act and the subsequent general flood control acts approved Aug. 28, 1937, June 28, 1938, Aug. 11, 1939, and Aug. 18, 1941, authorized improvement projects at 485 localities, and those subsequent acts clarified the policy of Federal participation in works for national flood control.

Pursuant to these authorization measures, 23 dams have been completed including, for example, the Arkport Dam on the Canisteo River, N. Y.; the Tionesta Creek Dam on the Tionesta Creek in Pennsylvania; the Conchas Dam on the Conchas River in New Mexico; the system of 14 dams in the Muskingum River Basin, Ohio; and the Hansen Dam in the Los Angeles County Drainage Area, California. The local flood protection projects which have been completed total about 68, including works in the Connecticut River Basin in Massachusetts; the Susquehanna River Basin in New York and Pennsylvania; the Ohio River Basin; and numerous other localities.

During 1941, 29 dam and reservoir projects and 126 local flood protection projects were under construction. These works included reservoirs in 17 states such as the Franklin Falls and Blackwater projects in the Merrimack River Basin in New Hampshire; the Knightsville and Birch Hill Reservoirs in the Connecticut River Basin, Massachusetts; the Indian Rock Reservoir in the Susquehanna River Basin, Pennsylvania; the Youghiogheny Reservoir and the Loyahanna Reservoir in the Allegheny-Monongahela Basin, Pennsylvania; the Wolf Creek Reservoir in the Cumberland River Basin, Kentucky; the Norfork and Clearwater Reservoirs in the White River Basin, Arkansas and Missouri; the Denison Reservoir in the Red River Basin, Oklahoma and Texas; the John Martin, Fort Supply, Great Salt Plains, Blue Mountain, and Nimrod Reservoirs in the Arkansas River Basin, Colorado, Arkansas, and Oklahoma; and the Cottage Grove and Fern Ridge Reservoirs in the Willamette River Basin, Oregon. The construction of 126 local flood protection projects was also carried on in 1941 at widely dispersed localities throughout the entire country. Examples of this type of work are the levee and flood wall projects along the Connecticut, Susquehanna, and Ohio rivers; the channel improvement proj-

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ect for Johnstown, Penn.; the levee works along the Illinois, upper Mississippi, and Columbia rivers; and the channel improvement project at Los Angeles, Calif.

WATER-BORNE COMMERCE AND TERMINAL FACILITIES

For the calendar year, 1940 the total net water-borne commerce of the United States, after eliminating all known duplications of traffic, amounted to 607,900,000 short tons.

Unsettled world conditions and the preparedness program of our own country were impelling factors responsible for many activities at ports as well as in the nearby areas served by the harbor facilities. In numerous harbors, the Army and the Navy have undertaken projects linked with national defense plans; shipyards have been expanded, marine repair plants and marine railways have been improved and extended, and new dry docks constructed. State, municipal, and private interests have constructed new terminals, increased the oil storage and handling facilities, installed new handling equipment, continued work on existing port projects, and initiated plans for new port works designed to handle the increasing water-borne commerce of the United States. Some of the more outstanding of these works of improvement are discussed under the headings following:

NORTH ATLANTIC PORTS

Providence, R. I.—Providence is expanding its facilities, and the work in progress during 1940 included a 1300-foot extension of the quay wall, marginal railroad tracks, and access roads. A one-story brick and steel shed was erected with 240,000 square feet of floor space, and channel dredging initiated.

Boston.—Commonwealth Pier No. 5, owned by the state, has been extensively renovated, and at the Boston Army Base a large amount of repair work has been accomplished. Two of the most powerful traveling cranes on this coast have been added at the lat-

ter terminal, which are intended primarily for the handling of scrap metal and steel.

New York.—The Port of New York Authority was active throughout the year, modernizing, reconstructing, and repairing many of its facilities. New Pier 64, replacing an old pier with the same number, was completed and put into service. It is 510 feet long and 100 feet wide and a two-story building 362 feet by 46 feet was built on the bulkhead. The cost of the new pier and of demolishing the old pier was \$1,333,000. Construction of a dry dock in New York Harbor of sufficient size to accommodate the largest naval and mercantile ships was authorized.

Philadelphia.—A welded steel concrete decked wharf was erected on the left bank of the Delaware River below the mouth of the Schuylkill River by a refining company with pipe lines on the wharf extending to 4 steel storage tanks. The city of Philadelphia constructed a steel frame, metal covered transit shed 920 feet long and 85 feet wide on Pier 82, South Wharves, for use in handling general cargo. Shipyards at the port and along the Delaware River have been repaired and renovated and are actively engaged in defense production.

SOUTH ATLANTIC PORTS

Baltimore.—The Baltimore & Ohio Railroad Co. constructed a crane pier at its Locust Point Terminal, part of open pile with timber deck and part of stone cross wall with concrete deck. The pier is 725 feet long and 104 feet wide and has six surface tracks extending its full length. Two 10-ton electric gantry cranes, each with a 51-foot reach, are available for handling heavy cargo. A large steel company enlarged one of its piers and constructed a new pier which was equipped with one 20-ton Diesel electric tower crane with a 60-foot reach and one 15-ton steam locomotive crane with a 45-foot reach. Shipbuilding facilities have been greatly expanded. The State of Maryland constructed a concrete bulkhead wharf

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for use by the Naval militia. Two concerns have added storage tanks in the upper Canton section of the port and installed pipe lines for handling petroleum products. The local power company started a 400-foot pier on which a coal tower will be installed for handling coal from barges and also dredged the channel to this location.

Newport News, Va.—One of the large forwarding and storage companies provided vacuum fumigating units at its plant for the extermination of the various pests which infest tobacco and other commodities offered for storage. Four chambers capable of handling 128 hogsheads every five hours and two chambers with a capacity of 64 hogsheads every five hours were provided. Other equipment installed in the port area include nine 28-ton cranes.

Jacksonville, Fla.—The Atlantic Coast Line Railroad constructed a short trestle pier for handling bulk cargo between car and barge.

GULF COAST PORTS

Tampa, Fla.—An oil terminal was constructed on the east bank of Sparkman Channel, south of Garrison Channel.

Mobile, Ala.—Construction was virtually completed on a new paper mill late in the year, the production of pulp was under way, and the paper making division expected to start work at an early date. The plant is designed to produce approximately 200 tons of sulphite pulp, and the paper machine capacity is approximately 160 tons per day. Pulp not used in the plant will be dried for shipment to the company's New England mills. An ore company completed a \$500,000 addition to its plant located on property leased from the Alabama State Docks, giving the plant a capacity of 1,000,000 pounds of aluminum oxide per day. A shipbuilding plant was renovated at a cost of \$500,000, and building of naval vessels and cargo ships was expected to start before the end of the year. The Alabama State Docks announced that the state's ocean terminal had achieved new high records

for cargo handled during the fiscal year ended Sept. 30, 1940.

New Orleans.—Late in the year the Dock Board formulated plans for the construction of a \$250,000 plant on the Inner Harbor Navigation Canal to be leased to a company formerly occupying part of the Army Supply Base on Poland Street which has been purchased by the Quartermaster Corps, U. S. Army. The Dock Board reported that in 1940 the publicly owned docks and wharves, sheds, public cotton warehouse, public grain elevator, bulk commodity plant, and the unique Inner Harbor and Industrial Canal represented a value, as carried on the books of the Board of Commissioners, of \$47,116,454.14, approximately \$24,000,000 of which has been contributed by the taxpayers of the city of New Orleans and the State of Louisiana.

Lake Charles, La.—A new oil refinery was in process of erection on a tract of land having a 2,000-foot frontage on deep water across the lake from the city of Lake Charles. The plant will have an annual capacity of 70,000,000 gallons of gasoline.

Galveston, Tex.—Among the more important improvements at this port were the rebuilding of Piers 11 and 12, with two new warehouses having a combined floor area of 220,000 square feet, each provided with switch tracks. Dockage space is provided for five additional ocean-going ships. A new conveyor and one additional bin were installed at Pier 34 for handling bulk sulphur, the capacity of the two bins being 10,000 tons each. Construction by the city of a new reinforced concrete and steel pleasure pier was authorized, to be located at the foot of 25th Street. The city of Galveston, through a bond issue, purchased two-thirds of the stock of the Galveston Wharf Co., including the Galveston Railroad, making it the sole owner of the property.

Houston, Tex.—Municipal Wharves Nos. 1, 2, and 4 were remodeled to permit the handling of passengers. Passenger landing ramps, ticket offices, and waiting and baggage rooms were installed. A three-story building was under construction and nearly

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completed in the center of the water front activity, to be used to house the appraiser's stores and allied activities. A large paper mill was completed and placed in operation on the Houston Ship Channel, bringing the owning company's total Houston investment to approximately \$6,500,000. A coffee firm added a 60-foot by 120-foot extension to its plant to be used for storing green coffee. Plans were formulated for the construction of a paint plant, to consist of a four-story manufacturing building, two one-story warehouses, and a one-story office building, the estimated cost of these buildings being \$350,000. Work was started in March by one of the major oil companies on a \$1,500,000 dewaxing plant to be used to take paraffin out of oil. Extensive additions were made to facilities for handling, refining, shipping, and storage of oil products.

Corpus Christi, Tex. — Shore wharves were built by two companies on the south side of the main turning basin above Wharf No. 8 of the Navigation District, and facilities for handling oil were improved.

Brownsville, Tex.—Extensive improvements for refining oil were inaugurated during the year. A castor bean co-products plant was under construction on port property during the year. Pipe lines were installed under the four general cargo docks at the port to permit vessels to be bunkered while loading or discharging cargo.

PACIFIC COAST PORTS

San Diego, Calif.—During the year, 1940 continued progress was maintained on WPA projects at the Twenty-eighth Street Area, in Battery Park, and in Lindbergh Field, and on new construction, modernization, and rehabilitation of public buildings on tidelands. The Harbor Department of the City of San Diego estimated the value of the municipal tidelands, piers, bulkheads, railroad spur tracks, tideland buildings, and equipment for harbor operation and maintenance at \$13,000,000 as of June 30, 1940. The harbor improvements to that date

have cost the city approximately \$5,790,000.

Los Angeles.—Maintenance work on harbor department facilities was carried on during the year, including the reconstruction of deteriorated bulkheads and replacement of fender piling at various wharves and of a large number of timber bearing piles. Studies were made of the cross-channel vehicular ferry service between San Pedro and Terminal Island with a view to the construction of new ferry terminals at both localities. Additional berthing space for oil tankers was provided.

Long Beach, Calif.—Early in the year the Long Beach Board of Harbor Commissioners contracted for the erection of wharf-loading facilities for a bulk cargo terminal to serve the large plant recently constructed for the purpose of refining carbon from the petroleum coke residue. This facility was constructed as a long narrow pier, 29 feet by 781 feet, its effective length being increased to 1,020 feet by three heavy dolphins at the off-shore end, interconnected with catwalks.

San Francisco.—Work was continued on the reconstruction of the 20 miles of railroad track along the San Francisco water front. The reconstruction work is being carried on without interrupting the heavy traffic movements between the piers and the various terminals, warehouses, and railroad yards in the dock area.

Oakland.—Additional electric blowers were acquired and put in service at the Seventh Street Unit of the Outer Harbor Terminal for handling copra and babassu nuts. The port reconditioned the floors in Terminal Building B in the rear of the Outer Harbor Terminal and private interests installed an almond shelling plant in Terminal Building E. The Howard Terminal Co. reconstructed its Pier 2, removing obsolete bulk coal bunkers, and provided modern gantry crane equipment for handling bulk products. Plans were approved by the Harbor Board for the construction of an extension to the wharf owned and operated by a milling company and for

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the construction of a tower and trestle for conveying grain products directly between the plant and vessels berthed at the wharf. A grain company approved plans for additions to its plant, including a bulk grain storage elevator and other structures, the estimated cost of which is \$250,000.

Portland, Ore.—New terminal developments and construction works undertaken by the port commission during 1940 included the installation of a pneumatic system for unloading grain from barge to ship. The designed capacity of this system is 120 tons of wheat per hour. In addition, the commission completed works of improvement at Municipal Terminals Nos. 2 and 4 under a WPA project. Major works of improvement undertaken by private enterprise within the water front zone under the jurisdiction of the port commission consisted of the construction of a reinforced concrete warehouse and of two open outfitting docks. Plans were announced by a salt manufacturing company for the construction of a \$500,000 chemical plant on the water front of the harbor.

Seattle.—This port has been particularly active in the construction of shipways and additional berthing space and in the installation of heavy cranes.

Tacoma, Wash.—Shipbuilding facilities have been greatly expanded at this port also.

Bellingham, Wash.—A shore wharf owned by a lumber company on the south side of Whatcom Creek Waterway was extended, its present length being 1,163 feet.

GREAT LAKES PORTS

Milwaukee.—The Milwaukee Board of Harbor Commissioners put in service new railroad track scales with a capacity of 150 tons to furnish weighing service at the Municipal Harbor Terminal. The scale will be particularly useful in serving the increasing movements of scrap iron and steel.

Monroe Harbor, Mich.—Work on the Monroe Harbor Terminal, begun in December, 1939, was completed on June 15, 1940. The terminal is con-

structed of cellular type steel piling with a concrete cap and wharf apron. The transit shed is 216 feet long and 72 feet wide and has a steel trussed frame with no posts inside. Unloading equipment consists of two three-ton

NET TOTAL INLAND WATERWAY COMMERCE 1930-40

Year	Short Tons	Year	Short Tons
1930	226,760,000	1935	225,918,000
1931	179,735,000	1936	276,264,000
1932	151,276,000	1937	313,287,000
1933	182,965,000	1938	277,755,000
1934	194,786,000	1939	329,400,000
		1940	366,800,000

COASTWISE COMMERCE (INCLUDING INTERCOASTAL) AT PORTS, 1940

	Short Tons
ATLANTIC COAST PORTS:	
Portland, Me.....	2,979,137
Boston, Mass.....	14,755,939
Providence, R. I.....	5,831,775
New York, N. Y.....	42,175,280
Philadelphia, Pa. (Philadelphia to the Sea).....	23,017,003
Baltimore, Md.....	7,884,545
Norfolk, Va.....	15,649,648
Newport News, Va.....	6,268,706
Wilmington, N. C.....	1,896,211
Jacksonville, Fla.....	1,933,039
All others, Atlantic Coast.....	24,749,931
GULF COAST PORTS:	
Tampa, Fla.....	2,706,300
Pensacola, Fla.....	153,759
Mobile, Ala.....	2,010,215
New Orleans, La.....	5,366,326
Baton Rouge, La.....	3,634,829
Galveston, Tex.....	2,187,986
Texas City, Tex.....	8,963,300
Houston, Tex.....	19,252,901
Port Arthur, Tex.....	15,236,893
Beaumont, Tex.....	16,907,433
Corpus Christi, Tex.....	6,587,950
All others, Gulf Coast.....	10,160,323
PACIFIC COAST PORTS:	
Los Angeles, Calif.....	13,162,781
San Francisco, Calif.....	3,096,589
Other San Francisco Bay ports.....	15,821,587
Portland, Ore.....	4,479,988
Tacoma, Wash.....	1,658,734
Seattle, Wash.....	4,748,813
All other, Pacific Coast.....	22,102,643
NONCONTIGUOUS PORTS:	
Ports of Puerto Rico and Virgin Islands.....	2,083,038
Ports of Alaska.....	519,528
Ports of Hawaii.....	5,275,025
GROSS TOTAL, COASTWISE COMMERCE AT ALL PORTS EXCEPT GREAT LAKES.....	
	313,858,155
NET TOTAL, ALL PORTS, corrected for duplications of receipts and shipments.....	
	156,929,078

WATERWAYS AND HARBORS

	Short Tons
ATLANTIC COAST RIVERS:	
Hudson River (except lower section).....	11,517,720
Delaware River above Philadelphia.....	4,410,253
Chesapeake Bay tributaries:	
Potomac River below Washington.....	3,015,910
James River.....	2,649,275
Other tributaries.....	4,486,562
St. Johns River above Jacksonville.....	729,610
All others, Atlantic Coast.....	10,725,630
GULF COAST RIVERS:	
Mobile River tributaries.....	1,702,557
Black Warrior, Warrior, and Tombigbee Rivers.....	1,892,427
Southern Louisiana waterways (except Mississippi River).....	7,546,611
All others, Gulf Coast.....	1,760,906
PACIFIC COAST RIVERS:	
San Joaquin River, Calif.....	1,048,658
Sacramento River, Calif.....	817,235
Columbia River System:	
Columbia and Lower Willamette Rivers below Vancouver, Wash., and Portland, Oregon.....	15,027,718
Other sections of Columbia River.....	2,216,028
Willamette River above Portland, Ore., and Yamhill River.....	3,066,773
Other Columbia River tributaries.....	2,942,626
All others, Pacific Coast.....	7,808,608
MISSISSIPPI RIVER SYSTEM:	
Mississippi River, Minneapolis to the Passes.....	32,372,232
Ohio River.....	29,549,275
Monongahela River.....	29,559,909
Allegheny River.....	3,928,732
Kanawha River.....	4,499,454
Cumberland River.....	852,138
Tennessee River, Knoxville to Paducah.....	2,206,913
All others, Mississippi River System.....	9,665,664
OTHER RIVERS (Not tributary to Atlantic, Gulf, and Pacific Coasts):	
Fox River.....	312,316
All others.....	29,329
FEDERAL CANALS AND CONNECTING CHANNELS:	
Atlantic Coast:	
Cape Cod Canal.....	7,901,182
Inland waterway from Delaware River to Chesapeake Bay.....	3,794,999
Waterways from Norfolk, Va.—	
To Sounds of North Carolina.....	242,770
To Beaufort Inlet, N. C.....	970,364
Waterway between Beaufort, S. C. and St. Johns River.....	788,719
All others, Atlantic Coast.....	3,568,429
Gulf Coast:	
Intracoastal waterway, St. Marks River, Fla. to Corpus Christi, Tex.....	11,643,436
All others, Gulf Coast.....	62,351,144
Pacific Coast:	
Lake Washington Ship Canal, Wash.....	2,579,491
All others, Pacific Coast.....	2,781,498
Great Lakes:	
Keeweenaw Waterway, Mich. (Through traffic).....	122,326
St. Marys Falls (Soo) Canal.....	89,360,174
Sturgeon Bay and Lake Michigan Ship Canal.....	255,606
Detroit River (partial).....	18,293,550
All others, Great Lakes.....	5,962,207
All others of record.....	14,542
Total, rivers, canals, and connecting channels improved by the Federal Government.....	
	406,969,506
STATE AND PRIVATE CANALS:	
New York State Barge Canal System.....	4,768,160
Florida State Canals.....	23,101
Navigation Canal, New Orleans, La.....	2,687,100
All other State and private canals.....	338,825
Total, State and private canals.....	7,817,186
GROSS TOTAL TRAFFIC, ALL WATERWAYS OF RECORD, 1940.....	414,786,692
NET TOTAL TRAFFIC IN 1940, corrected for duplications because of commerce moving over two or more waterways.....	366,835,582

IX. DEFENSE AND ARMAMENT

electric gantry cranes. The cost of the terminal was approximately \$300,000.

Cleveland.—Construction of 11,000 feet of new steel dock was completed at 18 locations along the Cuyahoga River where the channels have been widened and at the city-owned property. Three new bridges spanning the river were opened to traffic about the middle of the year, replacing old, slow-moving, and worn out bridges. Two of the new bridges have a clear channel 200 feet in width and the third has 220 feet. These wide navigation channels permit boats to move at full speed and reduce the traffic delays while the bridges are open.

INLAND WATERWAY COMMERCE

The table (page 347) shows the freight traffic for 1940 for waterways under improvement by the Federal Government, excluding the traffic on

short deep stretches of rivers like the lower Hudson and Delaware, which are really approaches to ports, and such tonnage for the Detroit River as is in excess of that carried through the locks at Sault Ste. Marie.

COMMERCE THROUGH THE PANAMA CANAL

Fiscal Year	Intercoastal ¹ (Short Tons)	Total (Short Tons)
1931	9,862,020	28,092,736
1932	7,417,742	22,184,958
1933	7,197,801	20,280,655
1934	9,877,602	27,684,889
1935	8,919,019	28,346,670
1936	8,645,364	29,686,562
1937	7,324,792	31,481,380
1938	7,161,924	30,672,235
1939	7,711,200	31,210,622
1940	8,639,680	30,574,898
1941	Not available	

¹ Included in coastwise figures.

FOREIGN AND DOMESTIC COMMERCE OF PORTS

(Calendar Year, 1940)

Grand Divisions	Foreign		Domestic	Grand Total
	Imports	Exports		
Atlantic Coast.....	31,616,001	22,164,148	298,359,973	352,140,122
Gulf Coast.....	6,100,015	14,941,236	121,751,632	142,792,883
Pacific Coast.....	3,024,410	12,462,184	98,834,429	114,321,023
Great Lakes.....	4,117,575	16,828,986	294,755,373	315,701,934
GRAND TOTAL:				
Unadjusted.....	44,858,001	66,396,554	813,701,407	924,955,962
Adjusted ¹	44,858,001	66,396,554	465,978,715	577,233,270

¹ All known duplications of traffic eliminated.

PERIODICAL PUBLICATIONS

Army and Navy Journal

1701 Connecticut Ave. N.W., Washington, D.C.

Army and Navy Register

511 Eleventh Street N.W., Washington, D.C.

Army Ordinance

806 Mills Building, Washington, D.C.

Cavalry Journal

1624 H Street N.W., Washington, D.C.

Coast Artillery Journal

1115 Seventeenth Street N.W., Washington, D.C.

Field Artillery Journal

1624 H Street N.W., Washington, D.C.

Infantry Journal

1115 Seventeenth Street N.W., Washington, D.C.

Marine Corps Gazette

United States Marine Corps, Washington, D.C.

Military Engineer

808 Mills Building, Washington, D.C.

Quartermaster Review

923 Fifteenth Street N.W., Washington, D.C.

COGNATE SOCIETIES AND RESEARCH INSTITUTIONS

U.S. Coast Guard Magazine
462 Indiana Ave. N.W., Washing-
ton, D.C.
U.S. Navy Magazine
Ocean Center Bldg., Long Beach,
Calif.

Waterways Journal
1605 Chemical Building, St. Louis,
Mo.

COGNATE SOCIETIES AND RESEARCH INSTITUTIONS

(For further information, the reader may address the following organizations)

SERVICE SOCIETIES

AMERICAN LEGION, THE, National Headquarters, 777 N. Meridian St., Indianapolis, Ind.
AMERICAN REMOUNT ASSN., 810 18th St., N.W., Washington, D.C.
AMERICAN SOCIETY OF NAVAL ENGINEERS, Bureau of Engineers, Navy Department, Washington, D.C.
ARMY ORDNANCE ASSN., Mills Bldg., 17th St. and Pennsylvania Ave., Washington, D.C.
ASSOCIATION OF MILITARY SURGEONS OF THE UNITED STATES, Army Medical Museum, Washington, D.C.
CHEMICAL WARFARE SERVICE, Edgewood Arsenal, Maryland.
NAVY LEAGUE OF THE UNITED STATES, INC., Mills Bldg., Washington, D.C.
QUARTERMASTERS' ASSN. OF THE UNITED STATES, 923 15th St., N.W., Washington, D.C.
RESERVE OFFICERS' ASSN. OF THE UNITED STATES, 1726 Pennsylvania Ave., N.W., Washington, D.C.
SOCIETY OF AMERICAN MILITARY ENGINEERS, 808 Mills Bldg., Washington, D.C.
SOCIETY OF NAVAL ARCHITECTS & MARINE ENGINEERS, 29 W. 39th St., New York City.
UNITED STATES CAVALRY ASSN., 1624 H St., N.W., Washington, D.C.
UNITED STATES FIELD ARTILLERY ASSN., 1624 H St., N.W., Washington, D.C.
UNITED STATES INFANTRY ASSN., 1115 17th St., N. W., Washington, D.C.
UNITED STATES NAVAL INSTITUTE, Annapolis, Md.

PATRIOTIC AND HEREDITARY

COLONIAL DAMES OF AMERICA, 421 E. 61st St., New York City.
DAUGHTERS OF 1812, NATIONAL SOCIETY, U. S., 1461 Rhode Island Ave., N.W., Washington, D.C.

FOUNDERS AND PATRIOTS OF AMERICA, Fifth Ave. and 59th St., New York City.

GENERAL SOCIETY OF COLONIAL WARS, 196 N. Beacon St., Hartford, Conn.

GENERAL SOCIETY OF MAYFLOWER DESCENDANTS, 420 Lexington Ave., New York City.

MILITARY ORDER OF FOREIGN WARS OF THE U.S., 15 Broad St., New York City.

MILITARY ORDER OF THE LOYAL LEGION OF THE U. S., 4 W. 43d St., New York City.

MILITARY ORDER OF THE WORLD WAR, 1700 Eye St., N.W., Washington, D.C.

NATIONAL SECURITY LEAGUE, 45 W. 45th St., New York City.

NATIONAL SOCIETY OF THE DAUGHTERS OF THE AMERICAN REVOLUTION, Memorial Continental Hall, Washington, D.C.

NATIONAL SOCIETY OF THE SONS OF THE AMERICAN REVOLUTION, 1227 16th St., N.W., Washington, D.C.

NAVAL AND MILITARY ORDER, SPANISH-AMERICAN WAR VETERANS, 184 State House, Boston, Mass.

PILGRIM SOCIETY, Pilgrim Hall, Court St., Plymouth, Mass.

SOCIETY OF THE CINCINNATI, INC., 2118 Mass. Ave., Washington, D.C.

SONS OF CONFEDERATE VETERANS, 609 Law Bldg., Richmond, Va.

SONS OF UNION VETERANS OF THE CIVIL WAR, 2225 Municipal Bldg., New York City.

UNITED CONFEDERATE VETERANS, 1528 Lowerline St., New Orleans, La.

UNITED SPANISH WAR VETERANS, INC., 40 G St., N.E., Washington, D.C.

VETERANS OF FOREIGN WARS OF THE U.S., Broadway at 34th St., Kansas City, Mo.

PART FOUR

ECONOMICS AND BUSINESS

DIVISION X

BUSINESS AND FINANCE

ECONOMIC AND BUSINESS CONDITIONS

BY S. S. HUEBNER
PROFESSOR, UNIVERSITY OF PENNSYLVANIA

BROAD EXPANSION IN BUSINESS ACTIVITY

Nearly all outstanding business indices showed a remarkable increase in business activity during 1941, with highest levels well maintained to the end of the year. The iron and steel business operated at nearly full capacity and at prices well maintained throughout the year. The bituminous coal output showed, at the close of the year, an increase of 9.3% as compared with a year ago, and the petroleum output an increase of 19.1%. Most of the other outstanding industries may also be described as prosperous, and in most instances at rising prices. The average of all commodity prices indicates an increase of about 16.8% during the year. Building construction, as will be explained later, was record-breaking, and the decline in the later months was altogether due to the enforcement of government regulations. The same was also true of automobile production and electric output, the first exceeding 1940 (first ten months) by over 20%, and the latter showing gains over the previous year running from 12½% for January to 21% for September. Exports and imports both showed a large increase over 1940, with a huge balance of trade of nearly \$1,000,000,000. In fact, exports were the largest since 1929. Dividend pay-

ments were also much larger than in 1940, industrial dividends for the first nine months of 1941 exceeding those of the corresponding period in 1940 by 8½%, and railroad dividends by over 19%. The commercial failure record was splendid as compared with the previous year, with respect to both the number of failures and the total volume of liabilities involved.

Railroad freight loadings for the year increased by 16% over the loadings of 1940, and operating revenue increased by about 25%. Bank clearings at the end of the year (week of Dec. 20) were 17.3% greater for all cities (including New York City) than was the case for the corresponding week in 1940, while for the country as a whole, exclusive of New York City, the gain was 36.5%. The farm situation, as will be explained later, was excellent both as to acre yield and prices.

Only one leading business index proved to be an outstanding exception to the general trend of excellent business, namely, the stock market. Despite tremendous improvement in business, and increased declarations in dividends, the stock market remained unusually stagnant throughout the year with respect to volume of transactions as well as in the price level. For the first five months, a declining tendency occurred in stock

ECONOMIC AND BUSINESS CONDITIONS

prices, followed by a brief rise during the middle months of the year. Thereafter a steady decline occurred until the close, when the average price level represented a decline of about 11% as compared with the beginning of the year. But, contrary to 1940, in the field of finance new capital flotations showed a very substantial increase, varying from 12½% for January to 21% for September.

As was the case in 1940, sight must not be lost of the fact that much of the year's improvement is to be attributed to foreign war orders or artificial government action, especially in connection with national defense. Progress, therefore, may not be considered as entirely due to a natural, normal business demand. As the *Guaranty Survey* (Nov. 24 issue) puts it: "Current trade reports reflect increasing irregularity as the defense program exerts its diverse influences on the various branches of business. On the whole, however, a high average level of activity is apparently being maintained. The movement of railway freight has passed its seasonal peak but, with allowance for this factor, remains close to the high levels reported earlier in the year. Electric power production has continued very little below record levels. Except where definite obstacles exist in the form of emergency restrictions or labor difficulties, industrial operations continue at the high rates previously reported. The seasonally adjusted Federal Reserve index of industrial production for last month stands at a preliminary figure of 164 per cent of the 1935-39 average, as against 161 in September, reflecting mainly increases in activity in industries producing machinery, armament and other durable manufactures required under the defense program."

AGRICULTURE

The agricultural situation for 1941 may be described as record-breaking from a farm income standpoint. Excellent production and prices averaging about 25 per cent in excess of 1940 combined to make the farmer's lot considerably better than has been

the case in nearly a decade. Wheat showed the highest acre yield on record and the largest total crop for any year except 1915. Corn production reached the third highest total since 1928. The largest annual record in history was also recorded for barley, grain sorghums, rice, dry beans, and dry peas. To quote the *Guaranty Survey* (issue of Nov. 24):

"A combination of record-breaking production and high prices, resulting in large farm income, is still the official expectation for agriculture. Production of food this fall and winter will be the largest in history, according to the Department of Agriculture; and farmers are planning for a new record in output of food next year. Besides the large harvests of food crops this season, the numbers of livestock on farms for the production of meats, milk, eggs and other products are at peak figures.

"Farm prices this year are likely to average nearly 25 per cent higher than in 1940, according to the official estimate; and a further gain of approximately the same magnitude is forecast for next year. Since prices are already much higher than they were in the early part of 1941, an additional rise of slightly more than 10 per cent would be sufficient to bring this about. Among the favorable factors in the outlook, in the view of Government economists, are the prospects for a higher level of business activity and consumer incomes, larger total purchases of farm products under the food-for-defense program, reduced imports of foreign commodities that compete with domestic products, and strong speculative and storage demand in anticipation of a rising price level.

"Cash farm income, including Government payments, this year is estimated at \$11,200,000,000, or 25 per cent more than the 1940 total. Another 25 per cent rise, bringing the figure above \$13,000,000,000, is believed likely to occur next year. Although farm production costs,

X. BUSINESS AND FINANCE

covering such expenses as labor, rent and feed, will average about 15 per cent higher this year than in 1940, the rise in gross farm income is considered sufficient to bring net returns to the highest figure since 1920."

Prices of leading farm products in 1941 (November) varied considerably from the prices a year before, and in nearly all cases were considerably higher. Thus, according to the price index of 28 basic commodities, compiled by the Bureau of Labor Statistics (Nov. 7), the Nov. 7, 1941 price of wheat (Kansas City) was \$1.145, as compared with \$0.804 a year ago; for flax seed (Minnesota) \$1.815, compared with \$1.55; for corn \$0.761, compared with \$0.643; for butter (Chicago) \$3.65, compared with \$3.08; for tallow (Chicago) \$0.09, compared with \$0.045; for hogs (Chicago) \$10.425 per cwt., compared with \$6.325; for steers (Chicago) \$11.500 per cwt., compared with \$11.625; for lard (New York) \$1.106 per pound, compared with \$0.54; for cotton seed oil (New York) \$1.127 per pound, compared with \$0.56; and cotton (average of ten markets) \$1.64 per pound, compared with \$0.96.

MANUFACTURING AND MINING INDUSTRIES

In these industries, where the output of product is more subject to control than in agriculture, price changes were not so considerable, but

in most instances changes represented increases in prices. Comparing November, 1941 (the latest available), with the corresponding quotations of 1940, the following price changes may be selected from many listed in the *Guaranty Survey* (Nov. 24): coffee, 13 $\frac{1}{8}$ ¢ per pound as compared with 7¢; copper, 11.87 $\frac{1}{2}$ ¢ per pound as compared with 11.87 $\frac{1}{2}$ ¢; hides, 15 $\frac{1}{2}$ ¢ per pound as compared with 14 $\frac{1}{2}$ ¢; pig iron, \$23.50 per gross ton as compared with \$22.50; steel billets (Pittsburgh), \$34 per gross ton as compared with \$34; lead, 5.85¢ per pound as compared with 5.80¢; petroleum (Pennsylvania), \$2.75 per barrel as compared with \$2.00; rosin, \$2.57 per 280 pounds as compared with \$1.88 $\frac{1}{2}$; rubber, 22 $\frac{3}{8}$ ¢ per pound as compared with 21 $\frac{3}{8}$ ¢; sugar, 3.50¢ per pound as compared with 2.90¢; tin, 52.00¢ per pound as compared with 50.50¢; wool, \$1.10 per pound as compared with \$1.10; zinc, 8.25¢ per pound as compared with 7.25¢.

NEW CAPITAL FLOTATION

New corporate financing (as distinguished from refunding issues) continued during 1941 on a considerably higher level than was the case during 1940. The total new capital financing for the first nine months of the year aggregated \$770,160,000 as compared with \$457,513,000 for the same period of 1940, and with \$310,737,000 for the same period of 1939, \$315,947,000 for 1938, and \$1,154,135,-

CORPORATE FINANCING

	1940		1941	
	Capital	Refunding	Capital	Refunding
January.....	\$ 35,405,000	\$137,460,000	\$ 52,929,000	\$271,388,000
February.....	45,404,000	210,842,000	31,550,000	227,012,000
March.....	30,527,000	103,799,000	86,634,000	115,288,000
April.....	53,925,000	192,353,000	39,470,000	107,181,000
May.....	89,287,000	82,660,000	63,874,000	197,102,000
June.....	9,339,000	102,276,000	90,467,000	113,390,000
July.....	44,989,000	225,623,000	43,569,000	86,468,000
August.....	67,938,000	111,494,000	327,403,000	74,427,000
September.....	68,006,000	62,465,000	34,265,000	161,391,000
October.....	47,728,000	345,347,000		
November.....	168,943,000	93,943,000		
December.....	62,199,000	334,580,000		

Source: *Survey of Current Business* (November issue each year).

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000 for 1937. Smallness of the year's new capital flotations is also indicated by comparing it with the yearly totals of \$1,215,000,000 for 1936, \$4,494,000,000 for 1930 and \$8,639,000,000 for the banner year 1929. However, the 1941 record greatly exceeds the extraordinarily small figures presented during the height of the depression period, 1932-35. It is also interesting to note a tremendous monthly fluctuation in new capital flotations during 1941. Thus for September, the total reached only \$34,000,000, whereas for August the monthly total exceeded \$327,000,000. The total of refunding issues for the first nine months of the

year continued at a very substantial total, namely, \$1,354,000,000, as compared with \$1,252,326,000 for the same period of 1940. This figure is substantially larger than the total for 1938 and 1937, although considerably smaller than the figures for 1940 and 1939.

BANK CLEARINGS

Bank clearings showed an extraordinary increase toward the end of the year, the grand total for the week ended Dec. 20 (*Commercial and Financial Chronicle*) for 112 cities being \$9,595,498,231 as compared with \$8,249,423,708 for the corresponding week of 1940, an increase of 17.3%. For the corresponding week of 1939 and 1938, the totals were \$7,336,695,753 and \$6,624,084,290. Exclusive of New York City, the nation's Federal Reserve districts show total bank clearings of \$4,671,980,610, an increase of 36.5% as compared with the 1940 corresponding week's total of \$3,422,685,519. The huge showing for 1941 (exclusive of New York) also compares with \$3,169,959,539 and \$2,727,325,944 for the corresponding week of 1939 and 1938.

For some of the Federal Reserve districts, the 1941 increase over 1940, as shown by the following table, is extraordinary. For five of the Reserve districts, the increase exceeds 40%, and in four more instances the excess ranges between 30% and 40%.

YEARLY TOTALS

	Capital	Refunding
1941*.....	\$ 962,848,520	\$ 1,493,081,809
1940.....	736,382,782	2,026,195,056
1939.....	371,249,537	1,807,623,508
1938.....	871,998,950	1,267,245,739
1937.....	1,225,012,213	1,208,679,946
1936.....	1,214,950,299	3,416,995,382
1935.....	403,569,958	1,863,858,807
1934.....	178,257,949	312,836,500
1933.....	160,717,178	220,866,478
1932.....	325,361,625	318,533,720
1931.....	1,763,448,723	825,516,700
1930.....	4,944,403,166	528,875,877
1929.....	8,649,439,560	1,386,921,569
1928.....	6,079,602,416	1,738,274,615
1927.....	5,391,008,544	1,928,187,260
1926.....	4,357,002,750	942,550,970
1925.....	4,100,725,167	637,384,524
1924.....	3,322,295,764	516,275,300
1923.....	2,702,496,155	530,343,942

* Eleven months.

Source: *Commercial and Financial Chronicle*.

BANK CLEARINGS

Federal Reserve District	1941 (millions)	1940 (millions)	Increase or Decrease (%)
First—Boston (12 cities).....	473	338	+39.6
Second—New York (12 cities).....	5,092	4,972	+2.4
Third—Philadelphia (10 cities).....	727	578	+25.7
Fourth—Cleveland (7 cities).....	604	415	+45.3
Fifth—Richmond (6 cities).....	258	201	+28.3
Sixth—Atlanta (10 cities).....	326	245	+33.4
Seventh—Chicago (18 cities).....	883	626	+41.0
Eighth—St. Louis (4 cities).....	275	202	+36.4
Ninth—Minneapolis (7 cities).....	175	121	+45.1
Tenth—Kansas City (10 cities).....	231	163	+41.9
Eleventh—Dallas (6 cities).....	126	91	+38.5
Twelfth—San Francisco (10 cities).....	424	298	+42.1
Grand Total (112 cities).....	9,595	8,249	+17.3
Outside New York City.....	4,672	3,423	+36.5

Source: *Commercial and Financial Chronicle*, Dec. 27, 1941.

X. BUSINESS AND FINANCE

SECURITY MARKETS

Throughout 1941 the security market was extremely dull and the price average remained at a relatively very low level. Moreover, no sensational price movements occurred during the year. In view of the exceptional industrial activity and the large earnings of corporations, the 1941 stock market acted entirely contrary to expectations.

For the year as a whole, the stock price level showed a decline of about 11%. From January to April the average monthly price movement was slightly downward; then a slight upward movement occurred which spent its force by the close of August, and thereafter the market again receded to the close of the year. But at no time were the transactions large or the price movements extraordinary.

Apparently the market ignored all favorable industrial news for the time being. It seemed to reflect unfavorable future conditions and was at all times marked by fear and indecision. Probably the declining market was due to the speculative vision of greatly increased taxes, a fear of the regulation of profits and the regimentation of business, the adverse effects of priorities, the loss of business and profits occasioned by prospective inflation, and in general the future burdens occasioned by the wastage and disorganization produced by a long and extremely expensive international war. There can be no doubt that all of the aforementioned factors, together with constant labor troubles and a persistent selling to establish losses for tax deduction purposes, had their chilling effect upon our speculative security markets. (See "The Security and Money Markets," pp. 360-65).

RAILROAD INDUSTRY

The year's account represents a decided change in the unfavorable railroad situation of previous years. According to the Association of American Railroads, revenue freight car loadings for the year, up to and including Dec. 20 (latest information available) stood at 41,678,401 for 1941,

as compared with 35,812,547 and 33,363,434 for the corresponding period of 1940 and 1939. Freight loadings were, therefore, more than 16% in excess of those of 1940, and showed the largest volume since 1930.

With respect to railroad profits during 1941, the indications are also that these will be approximately as large as in 1930. For the first ten months, according to the Alexander Hamilton Institute, profits amounted to \$409,000,000 in 1941 as compared with \$104,000,000 in 1940. For September, quoting the *Guaranty Survey* (Nov. 24 issue): "The higher level of railway earnings reported in the early part of the year has not been fully sustained. The net operating income of Class I railroads in September, before interest and rentals, was at the annual rate of return of 3.45 per cent on property investment, as against 4.04 per cent in August and 2.50 per cent a year ago. The total for the first nine months of the year represents an annual rate of 4.00 per cent, as compared with 2.38 per cent in the corresponding period last year. Preliminary reports from 87 roads representing 81.5 per cent of total operating revenues show that estimated operating revenues of those roads last month were 25.1 per cent higher than in October, 1940. This increase compares with one of 27.8 per cent for all Class I roads in September."

EXPORTS AND IMPORTS

This branch of economic activity showed a considerable improvement over 1940, just as that year showed a substantial gain over 1939. Again, as was the case the previous year, a considerable portion of the improvement is traceable to the export of war materials. Exports for the first nine months of 1941 totaled \$3,317,596,000. This figure compares with exports of \$3,027,440,000 during the corresponding period of 1940 and with \$2,184,700,000 and \$2,295,447,000 for the same months of 1939 and 1938. Imports for the first nine months of 1941 totaled \$2,315,787,000 as compared with (for the corresponding

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period) \$1,872,196,000 for 1940, \$1,-621,731,000 for 1939, and \$1,434,150,000 for 1938. It should also be noted that, during the year, the balance of trade, as reflected by the excess of exports over imports, amounted to the large total of \$900,289,000. This balance is somewhat less than the excess of \$1,085,608,000 for the corresponding period of 1940, but is very much larger than the balance of \$564,173,-000 for the first nine months of 1939. According to the Alexander Hamilton Institute's account: "Figures for the first nine months indicate that the value of merchandise exported from the United States in 1941 was larger than in any year since 1929. The prospect is that a further expansion in exports will occur in 1942 despite the continued disruption of many foreign markets by the war. Great Britain and other opponents of the Axis will require a large amount of American goods and they will have no difficulty in financing such requirements because of the funds made available by the Lease-Lend Act. So far, actual exports under this act have amounted to only \$595,000,000, leaving a large balance of the total of \$12,985,000,000 appropriated by Congress still to be exported."

AUTOMOBILE PRODUCTION

Figures of automobile production during the first ten months of 1941 (*Automobile Facts*, published by the Automobile Manufacturers Association—December, 1941) show a substantial increase over the corresponding period of 1940. For 1941 (first ten months) total production of passenger cars and trucks amounted to 4,203,978 as compared with 3,498,435 for the corresponding period of 1940, an increase of 20.2%. For 1939 and 1938 the corresponding production amounted to 3,125,150 and 2,100,739. The 1941 gain over 1940 took place with respect to both passenger cars and trucks. Passenger car production during the first ten months of 1941 totaled 3,313,237 as compared with 2,888,706 for the same period of 1940, and of trucks, 890,741 as compared with 609,729.

Automobile output, however, was greatly curtailed during the latter part of the year, owing to the establishment of priorities in the interest of the war effort. Thus for September and October, the decline of output of all types of vehicles was 13% and 22.6% respectively, as compared with the same months of 1940, and for November the estimated decline is put at 27% as compared with November of 1940. At the close of the year, press accounts were to the effect that "the Government has halted the sale of new passenger automobiles and light trucks, and has prepared to convert the full resources of the country's automotive plants into a giant armament-producing industry." Were it not for such curtailment, the 1941 record of output for the entire year would likely have been excellent.

IRON AND STEEL OPERATIONS

In the iron and steel business, 1941 showed a substantial improvement over 1940, just as that year represented a substantial gain over 1939. According to the American Iron and Steel Institute, the output of pig iron showed a total of 26,694,000 tons during the first six months of the year, and the production of ferro-alloys, 727,000 tons. The total of 27,421,000 tons compares with a total of 21,238,000 tons for the first six months of 1940, or of 26,160,000 tons for the second six months of 1940. Since that time, judging from press accounts, despite shortage of material along certain lines, the business has maintained itself fairly well. Quoting the *Commercial and Financial Chronicle* (Jan. 1, 1942): "Consumption of iron ore in November was 6,501,027 gross tons, only slightly less than the record tonnage of October, 6,612,186 tons. Ore smelted in 11 months this year totaled 69,273,701 tons, compared with 56,253,276 tons in the comparable portion of 1940." At the close of the year, the *Iron Age* placed the national steel output at 96.5% of capacity, with operations in the Pittsburgh area at 97%, Chicago at 101.5%, Youngstown 95%, Philadelphia 90%, Cleveland 99%, Buffalo 92.5%, Wheeling 86%,

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Birmingham 95.5%, Detroit 106%, South Ohio River 108%, Western 97%, St. Louis 75%, and Eastern 107%.

Prices for pig iron were also well maintained during the year, the price ranging from a low on Jan. 2, 1941 of \$23.45 a ton to a high of \$23.61 on March 20. For finished steel the price on Dec. 29 was reported as 2.30467¢ a pound, which was also the price a year before.

ELECTRIC OUTPUT

According to the Edison Electric Institute, the production of electricity by the electric light and power industry of the United States totaled 3,186,804,000 KWH for the week ended Dec. 27, 1941. This output exceeded that of the corresponding week of 1940 by 15.6%. In fact, during the whole of the last half of the year, the weekly output for 1941 consistently exceeded that of 1940, week by week, the increase ranging from a minimum of 13.0% to a maximum of 17.8%. It is interesting to note that the output of 3,187,000,000 KWH for the week of Dec. 27, 1941 compares with 2,465,000,000 for the corresponding week in 1939, and 2,174,000,000 and 2,033,000,000 for the corresponding weeks of 1938 and 1937. From a monthly standpoint, the January output of 1941 exceeded that of 1940 by 12.5%, the June output by 20%, and the September output by 21%.

BUILDING CONSTRUCTION

Using the figures of the F. W. Dodge Corporation for 37 eastern states, new building awards for 1941, during the first nine months (latest available), totaled \$4,510,879,000. This compares with a valuation of permits of \$3,850,000,000 for the first ten months of 1940, and with total year figures of \$3,550,000,000 for 1939, \$3,197,000,000 for 1938, \$2,913,000,000 for 1937, \$2,675,000,000 for 1936, \$1,844,000,000 for 1935, and \$1,543,000,000 for 1934. Recent figures of the F. W. Dodge Corporation also show that "building contracts awarded during the first eleven months of 1941 are practically equal to the record high volume of 959,000,000 square feet of

floor space in 1938. This year's record, it is reported, will greatly exceed the 1940 volume which amounted to 689,000,000 square feet." These figures show a substantial improvement over previous years, and much of the year's gain is again traceable to war and defense requirements.

According to the latest announcement of the Labor Bureau, permits were issued during the first 11 months for buildings valued at \$2,524,215,000, an increase of 10% as compared with the corresponding period of 1940. Permits for new residential buildings for the 11 months amounted to \$1,372,162,000, a gain of 16% over the corresponding period of 1940. Permit valuations for new non-residential buildings increased about 1%, while additions, alterations, and repairs showed a gain of 8%. But a decided change, it should be noted, occurred in the later months of the year. Comparing November, 1941 with November, 1940, new residential permits show a decline of 5.6%, new non-residential permits a decline of 44.8%, and additions, alterations, and repairs an increase of 1.1%. The curtailment during the later months of the year is explainable by a ruling of the SPAB to the effect that certain materials, such as steel and copper, will be unavailable for the building industry unless construction is deemed necessary for direct national defense, or is essential to the health and safety of the people.

COMMERCIAL FAILURES

The 1941 record of commercial failures was again a very favorable one, as was also the case during the preceding five years. The number of business failures reported by Dun and Bradstreet for the first nine months of 1941 (latest available) amounted to 9,299, as compared with 11,509 and 12,431 for the corresponding period of 1940 and 1939. As explained in 1940, Dun and Bradstreet revised their figures with respect to both the number of failures and the liabilities involved, the "new series" as compared with the "old series" for previous years being somewhat larger, the in-

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crease, judged from the record of 1939, being about 20% with respect to the number of failures and 8% with reference to the liabilities. The nine months record of 1941 (9,299 new series) compares with full yearly records of 13,619 (new series) for 1940, and with (old series) 11,408 for 1939, 12,836 for 1938, 9,490 for 1937, 9,607 for 1936, 12,244 for 1935, 12,091 for 1934, 19,859 for 1933, and 31,822 for 1932, the bottom year of the depression. The total liabilities of failures amounted to only \$106,105,000 for the first nine months of 1941, as compared with \$136,603,000 and \$156,076,000 for the same periods of 1940 and 1939. The 1941 nine months record (\$106,000,000) compares with the following yearly record (new series) of \$167,000,000 for 1940, and with (old series) \$168,000,000 for 1939, \$247,000,000 for 1938, \$183,000,000 for 1937, \$203,000,000 for 1936, \$311,000,000 for 1935, \$334,000,000 for 1934, \$458,000,000 for 1933, and \$928,000,000 for 1932, the bottom year of the depression.

INDUSTRIAL AND RAILROAD DIVIDENDS

For the first nine months of 1941, dividend declarations of industrial American corporations (*The New York Times*) totaled \$2,716,051,731 and for American railroads \$138,504,829. These totals compare with \$2,502,146,000 and \$116,162,000 for the corresponding nine months of 1940, thus showing increases of 8.5% and 19.1%, respectively. In 1940, it should be noted, these two dividend records for the first nine months represented increases of about 14% and 10% respectively as compared with 1939. The 1941 nine months record of industrial dividends (\$2,716,000,000) compares with (using the Babson tables of previous years) \$2,502,000,000 and \$2,015,000,000 for the corresponding period in 1940 and 1939, \$2,707,000,000 for 1937, \$2,163,000,000 for 1936, \$1,717,000,000 for 1935, \$1,616,000,000 for 1934, \$1,481,000,000 for 1933, and \$1,863,000,000 for 1932. Railroad dividend payments for the first nine months of 1941 (\$138,000,000)

compare with \$116,000,000 for the corresponding period of 1940, \$106,000,000 for 1939, and with \$148,000,000, \$175,000,000, \$141,000,000, \$141,000,000, \$122,000,000, and \$141,000,000 for the corresponding months of 1937, 1936, 1935, 1934, 1933, and 1932.

GENERAL BUSINESS INDICES

Using the figures of the Board of Governors of the Federal Reserve System, it would appear that October, 1941 (latest figures available) showed extremely large increases along certain important lines, and substantial increases along many other lines, as compared with the corresponding month of 1940. Thus the index for iron and steel production shows an increase from 172 to 191, for locomotives from 160 to 378, tin consumption from 109 to 166, beehive coke production from 266 to 413, textiles from 123 to 151, leather production from 107 to 121, and bituminous coal from 98 to 127. In certain other lines, the increases were not as large, yet were substantial, namely, petroleum refining from 112 to 128, lubricating oil from 109 to 130, and tobacco products from 115 to 128. In certain important lines, there were decreases for the year, often occasioned by the establishment of priorities, but these declines were not exceptionally large. Reference should be made to automobile production, with a decline during the indicated year from 130 to 110, plate glass from 111 to 102, meat packing 133 for both years, sugar melting from 116 to 111, and newsprint production from 112 to 110. The figures for numerous leading groups, stated in tabular form, are as follows:

COMMODITY INDEX NUMBERS

Using the United States Department of Labor *Statistics Price Index* for main groups of commodities, 1941 experienced a substantial change in the price level for many groups of industries. For the month of October, 1941, this index stood at 92.4 as compared with 87.1 for June, 1941, 80.8

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INDUSTRIAL PRODUCTION

(1935-1939 Average = 100)

	Adjusted for Seasonal Variation			Without Seasonal Adjustment		
	Oct. 1941	Nov. 1940	Oct. 1940	Oct. 1941	Nov. 1940	Oct. 1940
MANUFACTURES						
Durable Goods						
Iron and Steel.....	191	171	172	191	172	171
Automobiles.....	110	134	130	110	161	142
Locomotives.....	378	168	160	378	163	152
Plate Glass.....	102	113	111	117	129	127
Tin Consumption.....	(Sept.) 166	112	109	(Sept.) 159	112	108
Beehive Coke.....	413	281	266	(Sept.) 413	309	274
Non-Durable Goods						
Textiles.....	151	135	123	151	137	126
Slaughtering and Meat Packing...	133	134	133	134	151	127
Wheat Flour.....	101	104	99	110	103	113
Sugar Meltings.....	(Sept.) 111	136	116	(Sept.) 132	112	113
Newsprint Production.....	110	109	112	110	112	112
Leather Production.....	121	109	107	122	98	98
Petroleum Refining.....	(Sept.) 128	114	112	(Sept.) 131	115	114
Lubricating Oil.....	(Sept.) 130	115	109	(Sept.) 130	115	109
Tobacco Products.....	128	113	115	133	115	120
Minerals						
Bituminous Coal.....	127	112	98	142	128	110
Anthracite.....	116	97	94	123	98	99
Petroleum, Crude.....	131	115	115	130	111	114
Iron Ore.....	203	192	163	281	162	294
Zinc.....	132	120	118	132	120	118
Silver.....	(Aug.) 129	127	120	(July) 126	128	119

Source: *Federal Reserve Bulletin*, December, 1941.

BUREAU OF LABOR STATISTICS WHOLESALE PRICE INDEX FOR MAIN GROUPS OF COMMODITIES

(1926 = 100)

Commodity Groups	Dec. 20 1941	Dec. 21 1940	Dec. 23 1939	Dec. 24 1938	Dec. 25 1937
All Commodities.....	94.0	79.7	79.3	76.6	81.2
Farm Products.....	96.0	69.1	67.8	67.2	72.9
Foods.....	91.6	73.4	72.1	72.2	78.9
Hides and Leather Products.....	115.5	102.7	104.4	93.8	98.4
Textile Products.....	91.4	74.2	77.8	65.2	69.4
Fuel and Lighting Materials.....	79.0	72.6	73.5	73.8	78.6
Metals and Metal Products.....	103.4	97.6	96.1	94.8	96.2
Building Materials.....	107.5	99.2	93.6	89.3	92.5
Chemicals and Drugs.....	91.7	77.7	78.0	76.4	79.2
Housefurnishing Goods.....	102.3	90.2	90.0	87.6	91.4
Miscellaneous.....	87.5	77.1	77.4	72.9	74.9
Raw Materials.....	93.3	72.9	73.3	70.3	75.3
Semi-manufactured Articles.....	90.0	80.7	82.1	75.1	77.4
Finished Products.....	95.1	83.1	82.2	80.2	85.0
All Commodities Other Than Farm Products.....	93.5	82.0	81.8	78.7	83.1
All Commodities Other Than Farm Products and Foods.....	93.9	84.4	84.3	80.5	83.6

Source: *Commercial and Financial Chronicle*, Jan. 1, 1942.

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for January, 1941, 79.4 for January, 1940, and 76.9 for January, 1939. Between January and October, 1941, this index represents a price increase of 14.2%. The latest available average of 92.4 for October, 1941 compares with total yearly averages of 78.6 for 1940, 77.1 for 1939, 78.6 for 1938, 86.3 for 1937, 80.8 for 1936, 80 for 1935, 75 for 1934, 66 for 1933, 64.9 for 1932, 73 for 1931, 6.4 for 1930, 95.3 for 1929, 100 for 1926, and 154.4 for 1920, the highest yearly average under this index since the beginning of the century. While favorable in comparison with any year of the preceding decade, the 1941 price level was still far beneath the levels to which we were accustomed prior to 1926. It is also interesting to note that, in contrast to the American index, the United Kingdom Board of Trade index shows a very slight increase for 1941, namely, from 149.5 for January to 154.3 for October. The United Kingdom index, it should be noted, has its substantial rise during 1939-40, the figure rising from 97.2 in January 1939 to 148.6 for December, 1940. In tabular form the index numbers of the United States Department of Labor for the main groups of commodities, at the

INDEX NUMBERS OF COMMODITY PRICES

(Source: U. S. Dept. of Labor—*Standard Trade & Security*, "Current Statistics.")
(Source: U. K. Board of Trade—Bank of England, *Statistical Summary*)

	U. S. Dept. of Labor		U. K. Board of Trade	
	1940	1941	1940	1941
January.....	79.4	80.8	125.3	149.5
February.....	78.7	80.6	128.3	150.0
March.....	78.4	81.5	128.8	150.8
April.....	78.6	83.2	132.2	150.9
May.....	78.4	84.9	133.7	151.3
June.....	77.5	87.1	134.4	152.4
July.....	77.7	88.8	139.7	153.2
August.....	77.4	90.3	140.1	153.2
September....	78.0	91.8	141.1	154.3
October.....	78.7	92.4	142.7	
November....	79.6		146.9	
December....	80.0		148.6	

close of the year, compared with former years as follows:

LABOR CONDITIONS

With respect to labor conditions, using October as the basis (latest figures available), 1941 employment shows advances along nearly all im-

FACTORY EMPLOYMENT AND PAYROLLS

	Employment						Payrolls		
	Adjusted for Seasonal Variation			Unadjusted for Seasonal Variation			Unadjusted for Seasonal Variation		
	Oct. 1941	Oct. 1940	Nov. 1939	Oct. 1941	Oct. 1940	Nov. 1939	Oct. 1941	Oct. 1940	Nov. 1939
Durable Goods									
Iron and Steel.....	138.6	116.0	110.8	139.8	117.1	111.1	174.7	123.3	114.7
Machinery.....	179.5	126.4	110.6	180.3	127.0	111.0	256.7	144.9	117.1
Transportation Equipment.....	201.2	139.1	102.3	200.0	138.5	102.7	279.7	161.3	105.6
Non-ferrous Metals.....	143.0	122.4	110.1	147.2	126.3	113.5	185.2	136.6	115.4
Lumber and Products.....	76.4	71.3	72.2	79.8	74.4	73.0	92.1	73.7	68.8
Stone, Clay and Glass.....	99.5	84.6	85.0	102.7	87.4	85.5	110.3	82.5	78.9
Nondurable Goods									
Textiles and Products.....	112.6	102.7	107.5	114.6	104.6	107.7	122.3	93.4	92.7
Leather Products.....	99.7	91.1	99.1	98.5	90.0	91.9	100.5	73.3	71.1
Food Products.....	139.8	129.7	129.6	151.3	140.9	129.8	161.9	134.1	125.3
Tobacco Products.....	64.1	63.3	63.1	67.3	66.5	66.4	74.9	66.7	62.9
Paper and Printing.....	124.9	116.2	115.7	126.5	117.6	117.5	135.6	115.1	114.2
Chemical and Petroleum Products.....	145.9	122.7	121.3	148.5	125.0	122.6	190.7	139.5	133.1
Rubber Products.....	110.1	91.5	93.0	111.6	92.6	93.9	135.8	101.0	99.8

Source: *Federal Reserve Bulletin* (1940 and 1941 figures from December, 1941, issue, pp. 1268-1271; 1939 figures from May, 1940, issue, pp. 448-451).

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portant lines as compared with the same month of 1940. In certain directions the increase has been tremendous, as, for example, iron and steel where there was an increase from 116 to 138.6, machinery production from 126.4 to 179.5, and transportation equipment from 139.1 to 201.2. Likewise with respect to payrolls, the showing was also most favorable as regards leading industries. Some, like iron and steel, machinery production, non-ferrous metals, lumber, stone, clay and glass, textile products, leather products, and chemical and petroleum products, showed remarkable increases in the payroll. Referring to the last available report of the Board of Governors of the Federal Reserve System, the showing was as follows

for leading types of industries as regards both employment and payrolls:

YEARLY AVERAGE

(U. S. Dept. of Labor)

1904.....	59.7	1923.....	100.6
1905.....	60.1	1924.....	98.1
1906.....	61.8	1925.....	103.5
1907.....	65.2	1926.....	100.0
1908.....	62.9	1927.....	95.4
1909.....	67.6	1928.....	96.7
1910.....	70.4	1929.....	95.3
1911.....	64.9	1930.....	86.4
1912.....	69.1	1931.....	73.0
1913.....	69.8	1932.....	64.9
1914.....	68.1	1933.....	66.0
1915.....	69.5	1934.....	75.0
1916.....	85.5	1935.....	80.0
1917.....	117.5	1936.....	80.8
1918.....	131.3	1937.....	86.3
1919.....	138.6	1938.....	78.6
1920.....	154.4	1939.....	77.1
1921.....	97.6	1940.....	78.6
1922.....	96.7	1941.....	*92.4

* October figure.

THE SECURITY AND MONEY MARKETS

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GENERAL CONDITIONS

The account of the year 1941, along all main lines, is very similar to that furnished in previous reviews for 1940 and 1939. The year's summary explained that, when the international war finally materialized, the stock market seemed remarkably settled in contrast to the original chaos and the subsequent extraordinary boom in security market prices during the first World War. As was explained: "If we look upon the stock market as a discounter of the future, it would appear that this time war no longer affords the speculative community the glamour that was the case in 1914-15."

During 1941, most of the adverse, as well as favorable, conditions continued to exert their influence in an intensified fashion. Moreover, it became increasingly clear throughout the year that the United States would become an active participant in the international conflagration. Yet despite the tremendous news of the year, 1941 stock market movements were extremely small. Moreover, the market was unusually dull and only rarely was there a million-share day. Nearly

all groups of stocks were surprisingly steady at an unusually low price level. From January to May there was a moderate sinking spell in the price level for all groups; then a moderate rally occurred which spent its force by the close of July. Thereafter a gradual decline set in which continued to the end of the year. Taking an average for all stocks, the year wound up with a decline of about 11 per cent as compared with the price level at the beginning of the year. The year's stock market price movement may thus be described as distinctly but moderately downward, and without any sensational occurrence.

The whole showing is surprising, to say the least. As explained in "Economic and Business Conditions" (p. 350), this country experienced an extraordinary increase in business activity, occasioned by a tremendous national defense program as well as by large war orders placed by foreign nations at war. Unemployment decreased enormously, and the earnings of corporations also showed up extraordinarily well. In fact, with respect to many leading corporations,

the dividends paid amounted to from 8 to 10 per cent on existing stock market prices for the common stocks of these companies. Yet despite the industrial boom, the stock market at all times gave every evidence of being influenced by fear and indecision. A gradual sinking in prices, rather than advancement, as might have been expected, was the story of the year. The market apparently was uninfluenced by present improved earnings and volume of business, and kept retreating despite the most favorable industrial news. The market was evidently looking ahead into the future, and was thus discounting unfavorable news.

In all probability the market dullness and the general price decline of 11 per cent was traceable to the increasing weight of certain unfavorable factors. Mention should be made of the increasing Federal indebtedness, the prospect of heavy increased taxation upon corporations as well as upon individuals, and the likelihood of inflationary tendencies designed to increase the cost of both raw materials and labor. This last phase probably weighed most heavily upon public utility stocks, which, as a group, suffered a larger decline than any other group of stocks. The year 1941 was also marked by constant labor troubles, by the adoption of priorities in many fields of endeavor, and by price restrictions and business regimentation. Because of greatly increased income taxes, the last quarter of the year was also marked by a heavy selling of securities in order to take losses for tax deduction purposes. Almost daily the newspapers were filled with rumors concerning heavy increases in taxation and regimentation of business of one kind or another to advance the defense program, to step up the war activity, and to curb the hazard of inflation. All this news, together with the increasing belief that business troubles along all the lines indicated would be steadily worse with respect to the future, was bound to cause fear and hesitancy and even gloom stock-market-wise.

INDUSTRIAL SHARE PRICES

The extent of the three stock market movements occurring during the year, namely, the decline from January to May, the rise from May to July, and the subsequent decline to the end of the year, may be shown by the monthly averages of the Standard Statistics Co. for various groups of stocks. Fifty representative industrial stocks had an average price of 102.6 for January. Thereafter this group maintained its monthly average fairly well, the averages for February to May, inclusive, being 96.1, 96.9, 93.9, and 92.4. For the next four months there was a moderate increase, the averages being 96.2 for June, 101.5 for July, 101 for August, and 101.7 for September. Thereafter a subsequent decline occurred which extended to 97.7 for October and 93.8 for November. This decline continued during December, but that month's average is not yet available. The November average of 93.8 for the year compares with 110.7 for the same month of 1940, and with 123 for November, 1939; 129.1 for November, 1938; 107.8 for November, 1937; 168 for January, 1937, and 53.5 for the yearly average of 1932, the bottom year of the 1930-36 depression. It is interesting to note that the November, 1941 average of 93.8 is approximately 1.8 times the 1932 yearly average of 53.5. It should also be pointed out that during 1929, the great prosperity year of the previous cycle, this industrial list reached the highest monthly level during September, namely, 245.9.

RAILROAD SHARES

With respect to 20 representative railroad stocks, the monthly average of the Standard Statistics Co. was surprisingly well maintained throughout all of 1941. For the first half of the year, January to June, inclusive, the monthly averages stood at 29.8, 28.4, 28.7, 29.0, 28.7, and 28.7. For July and August there was a moderate rally to 30 and 30.3, respectively. Thereafter a moderate decline occurred to 29.4 for September, 28.6 for October, and 27.8 for November. This decline continued moderately during

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December, but the average figure is not yet available. The November average of 27.8 compares with 31.1 for November, 1940; 33.5 for November, 1939; 31.7 for November, 1938; 33.1 for November, 1937; 47 for January, 1936; and with yearly averages of 36 for 1935; 42.9 for 1934; 39 for 1933; 26.8 for 1932; and 141 for 1929. During 1929 it should be noted that these railroad shares reached the highest monthly level during September, namely, 161.2. It is interesting to compare the November, 1941 average of 27.8 with the 1932 low monthly average of 15, and also with the September, 1929, high average of 161.2.

UTILITIES

A similar but considerably larger price trend is shown in the public utility group during 1941. According to the Standard Statistics Co. average for 20 representative public utility stocks, the monthly average declined from 55 in January to 51.4 for February, and thereafter to 50.6, 47.6, and 44.4, respectively, for March, April, and May. From June to September, inclusive, the average monthly price was fairly well maintained, the monthly average standing at 44.9 for June, 45.9 for July, 45.2 for August, and 44.6 for September. Thereafter the price sank rather rapidly to 42.1

for October and 37.9 for November. As compared with January (55), the November average of 37.9 represents a decline of nearly 31 per cent. The November, 1941 average of 37.9 compares with 58.9 for the corresponding month of 1940; with 69.5 for November, 1939; 66.4 for November, 1938; 63.3 for November, 1937; 100.9 for January, 1937; 88.4 for January, 1936; and with yearly averages of 62.8 for 1935; 65.5 for 1934; 81.8 for 1933; 88.7 for 1932; and 246 for 1929. During 1929 it should be noted that utility stocks also reached the highest monthly level in September, namely, 340.6. It is interesting to compare the November, 1941 average of 37.9 with the depression level of 88.7 in 1932 and with the 1929 high of 340.6.

COPPER AND BRASS SHARES

Attention may also be called to a representative list of seven copper and brass stocks, whose average price varied from a monthly average of 86.9 for January to 80.1 for February and to 81.1 and 78.5 for March and April. Thereafter a moderate increase occurred from May to July, inclusive, namely, to 83.4, 88.3, and 94.1. Then a decline occurred, month by month to the end of the year, the monthly average for August being 93.2, for September 90.8, and for Oc-

SECURITY MARKET PRICES

	Railroads 20 stocks		Industrials 50 stocks		Public Utilities 20 stocks		Copper and Brass 7 stocks		Stocks 90 stocks	
	1940	1941	1940	1941	1940	1941	1940	1941	1940	1941
January.....	31.2	29.8	119.0	102.6	70.4	55.0	134.8	*86.9	97.7	83.8
February.....	30.9	28.4	118.3	96.1	69.9	51.4	131.7	*80.1	98.0	78.5
March.....	31.4	28.7	119.1	96.9	67.6	50.6	138.0	*81.1	97.3	79.0
April.....	31.2	29.0	119.0	93.9	68.7	47.6	137.2	*78.5	97.4	76.5
May.....	26.4	28.7	102.4	92.4	60.4	44.4	117.6	*83.4	84.0	74.9
June.....	22.1	28.7	93.0	96.2	56.8	44.9	99.3	*88.3	76.8	77.5
July.....	26.3	30.0	95.1	101.5	61.7	45.9	92.3	*94.1	79.4	81.5
August.....	26.9	30.3	97.5	101.0	61.1	45.2	97.8	*93.2	81.0	81.1
September.....	28.8	29.4	102.2	101.7	60.9	44.6	107.5	*90.8	84.4	81.3
October.....	29.4	28.6	103.5	97.7	59.8	42.1	113.2	*83.4	85.2	78.0
November.....	31.1	27.8	110.7	93.8	58.9	37.9	124.5	*82.7	90.2	74.4
December.....	28.4		103.0		53.8		125.7		83.7	

* 1941 copper and brass figures use 1935-1939 as a base period. All other figures use 1926 as a base period.

The above figures are an average for the month based on daily closing prices, except for copper and brass, which are weekly prices.

(Source of data—Standard & Poor's *Trade and Securities*, "Current Statistics.")

THE SECURITY AND MONEY MARKETS

tober and November 83.4 and 82.7. The November average of 82.7 (new basis, see table) compares with 124.5 (old basis, see table) for the corresponding month of 1940, and with 146.9 for November, 1939; 165.8 for November, 1938; 115.4 for November, 1937; 227.4 for January, 1937; and 113.4 for January, 1936.

MARKET VALUE OF SHARES

Using the figures of the New York Stock Exchange (formerly published in the New York Stock Exchange *Bulletin*, but now furnished upon request), the total market value of 1,464,000,000 of listed shares on the New York Stock Exchange stood at \$37,882,000,000 at the close of November, 1941, a decline of only 6 per cent in comparison with the market value of \$40,280,000,000 at the close of January. The November market value of \$37,882,000,000 compares with \$41,848,000,000 on Dec. 1, 1940; \$45,505,000,000 at the same date in 1939; \$46,081,000,000 in 1938; \$40,716,000,00 in 1937; and with \$62,618,000,000 for March of 1937, the high mark before the bear market of 1937-38 began its course.

MONTHLY STOCK AVERAGES

The average monthly "All Stock Price Index" as furnished by the New York Stock Exchange stood at 51.6 for November, 1941, as compared with 57 for November, 1940; 63.2 for November, 1939; 64.1 for November, 1938; and with 48.1 for May of the same year. The Dec. 1, 1941 average of 51.6 compares with the following December averages for preceding years: 37.8 for December, 1937; 56.01 for 1936; 45.85 for 1935; 35.59 for 1934; 32.78 for 1933; 25.61 for 1932; 34.24 for 1931; 55.53 for 1930; 68.44 for 1929; and 97.8 for 1928.

VOLUME OF STOCK TRANSACTIONS

Stock transactions on the New York Stock Exchange during 1941 again showed an extreme dullness, thus continuing the movement recorded in previous issues of THE AMERICAN YEAR BOOK for 1936-40. Despite sensational war news and a very substan-

tial increase in business, there was an amazing stagnation in stock market activity. During only one month—July—did sales reach 17,871,457 shares. November, the next most important month, showed a total of transactions of only 15,047,000 shares. Three months showed sales ranging between 13,000,000 and 14,000,000 shares, four months between 10,000,000 and 12,000,000 shares, while two months—February and May—failed to reach a total of even 10,000,000 shares. The market may thus be described as uniformly dull throughout the year.

Shares sold on the New York Stock Exchange during 1941 totaled only 170,534,363 (as reported by *The New York Times*), as compared with 207,605,359 shares for 1940, 262,015,799 shares for 1939, 297,446,059 shares for 1938, 409,468,855 shares for 1937, 497,063,099 shares for 1936, 382,000,000 shares for 1935, 324,000,000 shares for 1934, 655,000,000 shares for 1933, 425,000,000 shares for 1932, 577,000,000 shares for 1931, 811,000,000 shares for 1930, and 1,125,000,000 shares for 1929, the highest figure on record.

SHARES TRADED ON THE NEW YORK STOCK EXCHANGE

	1940	1941
January.....	15,991,105	13,294,670
February.....	13,465,355	8,971,205
March.....	16,268,868	10,111,344
April.....	26,696,490	11,177,940
May.....	38,968,832	9,661,230
June.....	15,573,025	10,450,563
July.....	7,306,720	17,871,457
August.....	7,616,050	10,875,370
September.....	11,940,530	13,544,841
October.....	14,484,485	13,136,756
November.....	20,893,471	15,052,272
December....	18,400,428	36,386,715

Source: *The New York Times*.

On the New York Curb Market, sales also show a similar tendency toward extreme dullness, the total sales standing at only 34,690,900 shares (*The New York Times*), as compared with 43,041,774 shares for 1940, 45,800,633 shares for 1939, 49,795,922 shares for 1938, 104,178,804 shares for 1937, 135,000,000 shares for 1936, 76,000,000 shares for 1935, 56,000,000

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YEARLY TOTALS OF SHARE SALES

1920...	226,640,400	1931...	579,921,426*
1921...	172,712,716	1932...	425,235,829*
1922...	258,652,519	1933...	654,874,210*
1923...	236,115,040	1934...	323,871,840*
1924...	281,991,597	1935...	381,666,197*
1925...	454,404,733	1936...	496,063,099*
1926...	450,845,255	1937...	409,468,885*
1927...	576,563,218	1938...	297,446,059*
1928...	919,661,825	1939...	262,015,799*
1929...	1,124,991,490	1940...	207,605,359*
1930...	810,038,161	1941...	170,534,363*

Source: Babson chart.

* The New York Times.

shares for 1934, 101,000,000 shares for 1933, 57,000,000 shares for 1932, 110,000,000 shares for 1931, 220,000,000 shares for 1930, and 474,000,000 shares for 1929

THE BOND MARKET

Bond sales on the New York Stock Exchange during 1941 totaled \$2,114,098,550 (*The New York Times* report), as compared with \$1,671,598,875 for 1940, \$2,048,237,875 for 1939, \$1,859,525,825 for 1938, \$2,792,000,000 for 1937, \$3,575,000,000 for 1936, \$3,437,000,000 for 1935, \$3,729,000,000 for 1934, \$3,366,000,000 for 1933, \$2,972,000,000 for 1932, \$3,075,000,000 for 1931, \$2,779,000,000 for 1930, and \$3,020,000,000 for 1929.

During 1941 bonds maintained a fairly steady price level throughout the year. Using Moody's Bond Prices as a basis (*Commercial and Financial Chronicle*, Dec. 18, 1941), the monthly average for 120 domestic corporations stood at 106.39 at the beginning of the year. Thereafter the average price fluctuated narrowly from month to month until the price stood at 106.56 on Dec. 16. This compares with high and low for 1941 of 108.52 and 105.52, with high and low for 1940 of 106.74 and 99.04, and with high and low for 1939 of 106.92 and 100. The Dec. 16, 1941 price is, therefore, about midway between the high and low of the year, and compares with average prices of 106.56 and 100.98 for the corresponding date of 1940 and 1939. United States Government bonds stood at the high average level of 118.16 on Dec. 16, 1941, compared with high and low for the year of 120.05 and 115.89, and with 119.63 and 113.02 for 1940. On the

corresponding date (Dec. 16) for 1940 and 1939, the price levels were 119.60 and 115.10.

The extraordinarily high price of bonds has brought the average bond yield to very low figures. According to Moody's Bond Yield Average, the average yield for all of the 120 domestic corporation bonds was down to 3.36 per cent on Dec. 16. However, for choice bonds (the Aaa group) the yield was only 2.80 per cent, as compared with 2.71 per cent a year ago, and with 2.94 per cent on Dec. 16, 1939.

Using the Standard Statistics Co. average for 60 representative corporate bonds, the monthly high average stood at 99.87 for January, 1941 (new basis, see table). Thereafter the price, as was the case in 1940, fluctuated slightly from month to month, the average standing at 99.66 for November (the latest available). The November average of 99.66 compares with the following yearly high December averages (old basis, see table): 84.4 for 1940, 82.6 for 1939, 82.2 for 1938, 83.6 for 1937, 102.2 for 1936, 93.1 for 1935, 86.5 for 1934, 74.9 for 1933, 68.3 for 1932, 78.5 for 1931, 96.9 for 1930, and 99.1 for 1929.

All American bonds listed on the New York Stock Exchange (1,273 issues) showed a total market value of \$54,813,000,000 at the close of November, 1941. This value compares with

COMPOSITE BOND PRICES

60 Bonds

	1940		1941	
	High	Low	High	Low
January....	83.2	82.0	*99.87	*98.39
February...	82.6	81.9	*98.65	*96.45
March.....	82.4	81.8	*100.0	*96.75
April.....	83.3	82.0	*100.4	*99.05
May.....	82.3	76.5	*100.0	*98.67
June.....	80.3	77.0	*99.55	*98.74
July.....	81.7	80.3	*100.2	*99.26
August.....	82.1	81.0	*100.1	*99.33
September..	83.5	82.1	*99.43	*98.38
October....	83.8	83.3	*99.55	*98.62
November..	84.3	83.6	*99.66	*99.07
December..	84.4	83.6		

* 1941 figures use 1935-1939 as a base period. 1940 figures use 1926 as a base period.

Source: Standard, Trade & Securities, "Current Statistics"—November, 1941.

THE SECURITY AND MONEY MARKETS

\$50,755,000,000 on Dec. 1, 1940, \$47,839,000,000 on Dec. 1, 1939, \$50,301,000,000 on Dec. 1, 1938, and with \$39,088,000,000 on Dec. 1, 1937. On Dec. 1, 1941, the average price of the aforementioned number of listed bond issues stood at 94.80, which compares with 93.58 for Dec. 1, 1940, and with 91.24 for Dec. 1, 1939; 90.34 for Dec. 1, 1938; and with the following December averages of the preceding years: 92.36 for 1937; 100.55 for 1936; 93.69 for 1935; 91.68 for 1934; 82.98 for 1933; 81.36 for 1932; 84.13 for 1931; 96.51 for 1930; and 96.08 for 1929.

THE MONEY MARKET

With respect to both time and call loan rates, the 1941 tendency corresponded almost exactly to that prevailing during 1940 and the preceding seven years. During all of 1941 there was a continuing plethora of idle funds. As was the case during previous years, in fact back to 1933, New York time and call loans were quoted at only about 1 per cent or under, thus showing a continuing unusual absence of demand for funds for both commercial and speculative purposes. Beginning with a January average of

0.56 per cent for four to six months prime commercial paper, and 1 per cent for call loans in New York, the average monthly rates during 1941 remained extremely low month after month throughout the year. For prime commercial paper the rate in New York averaged 0.56 per cent from January to June, and thereafter declined to a monthly average of 0.50 per cent for the balance of the year to and inclusive of November (the latest available). For call loans in New York the monthly average remained at 1 per cent for each of the first 11 months of the year.

According to the New York Stock Exchange figures (November, 1941), the borrowings of New York Stock Exchange members on collateral security continued to show a relatively small volume. The total of \$436,000,000 may be compared with \$362,000,000 for Dec. 1, 1940, \$574,000,000 for Dec. 1, 1939, and, using the corresponding dates, with \$620,000,000 for 1938, \$687,000,000 for 1937, \$984,000,000 for 1936, \$846,000,000 for 1935, \$831,000,000 for 1934, \$789,000,000 for 1933, \$336,000,000 for 1932, \$730,000,000 for 1931, \$2,162,000,000 for 1930, \$4,017,000,000 for 1929, and \$6,392,000,000 for 1928.

INTEREST RATES

	Commercial Paper 4-6 Months		Call Loans—New York Stock Exchange Renewals—Average of Daily Renewal Rates		Gold Movements (Figures Show Excess of Imports Over Exports) (000,000 omitted)	
	1940	1941	1940	1941	1940	1941
January.....	0.75	0.56	1.00	1.00	236.4	234.2
February.....	0.67	0.56	1.00	1.00	197.4	108.6
March.....	0.63	0.56	1.00	1.00	459.8	118.6
April.....	0.63	0.56	1.00	1.00	249.9	172.0
May.....	0.63	0.56	1.00	1.00	435.1	34.8
June.....	0.63	0.56	1.00	1.00	1,162.	30.7
July.....	0.63	0.50	1.00	1.00	520.0	37.0
August.....	0.63	0.50	1.00	1.00	351.6	37.0
September.....	0.63	0.50	1.00	1.00	334.1	65.7
October.....	0.63	0.50	1.00	1.00	326.0	40.4
November.....	0.56	0.50	1.00	1.00	330.1	
December.....	0.56		1.00		137.2	

Source: Standard, *Trade & Securities*, "Current Statistics," November, 1941.

THE TEMPORARY NATIONAL ECONOMIC COMMITTEE

By G. WRIGHT HOFFMAN

PROFESSOR, UNIVERSITY OF PENNSYLVANIA

OVER-ALL EVALUATION

During the first half of 1941 the work of the Temporary National Economic Committee was completed. The work began in June 1938, thus consuming three years' time. As investigations go, it was not of the hurry-up type. It was deliberately planned and as deliberately executed. It was apparently not cramped for funds. Drawing its authority from a resolution of Congress, it was not hampered to the degree that many private undertakings are by lack of power to compel disclosure of needed confidential materials. The right of subpoena was granted and freely used. Voluminous and detailed records, expert witnesses, and ample technical help were supplied. However, something more than mere size and authority was needed to answer the summary question of whether the end-product was worth while. Many sources were drawn upon, but they may or may not have been ably and fairly handled. In order to summarize and evaluate these sources, it is desirable to consider them in the light of: (1) background and broad objectives of the investigation; (2) evidence presented; and (3) issues raised.

BACKGROUND AND OBJECTIVES

On April 29, 1938, the President set forth in a message to Congress his views regarding the existing state of economic control and competition in the United States. Because these views became the foundation upon which the entire T.N.E.C. investigation was based, a general understanding of them is necessary. Summarized, the President said: (1) ownership and control of American enterprise is concentrated in too few hands; (2) "interlocking financial controls have taken from American business much of its traditional virility, independence, adaptability and daring,—with-

out compensating advantages;" (3) we must either break up this control and thus encourage competition (favored by the President) or expect a growing concentration of public power in the government. The President then enumerated a number of areas to which, in his opinion, these broad tenets applied and asked that these areas be explored.

The joint Congressional resolution creating the T.N.E.C. faithfully repeated the President's views and ordered the Committee to produce detailed evidence. To this end the Committee appointed a staff of investigators. This staff was built around a small group of men attached mainly to the Federal Trade Commission, Securities and Exchange Commission, Department of Justice, and Department of Commerce. These men, mostly of legal training, added others to their staff, including a number of college professors.

The work of the investigators was cut out for them, namely, to find evidence of harmful business practices and undue economic control. This commitment involves certain rather obvious implications. For one thing, harmful practices and undue economic control are assumed. It is necessary only to supply the evidence. These assumptions may or may not be valid, depending upon the standards used to measure harmful practices and undue control. Since no standards were provided, it must then be further assumed that the investigators would supply them or that those who make use of their results will be able to set up adequate standards drawn from their own experience.

This last point deserves special emphasis, since the results of the entire investigation turn upon it. There are studies with respect to which the investigator can assume that those who use his results can formulate their

THE TEMPORARY NATIONAL ECONOMIC COMMITTEE

own standards. An example might be a canvas of election irregularities involving ghost votes, votes bought at so much per head, and election officials who do not count any too well. There are generally accepted standards to appraise these practices and they are well known. But for most social science studies, the benchmarks by which their results are to be measured can not be freely assumed. The T.N.E.C. investigation is of this type. When does a company become too large? At what point does voting control become operative? Under what conditions is lobbying socially undesirable? These and many other questions demand standards before concrete practices can supply an answer.

Unfortunately the investigational staff of the T.N.E.C. did not set up such standards. It is a difficult, though for most of the issues raised, not an impossible task. There is a body of carefully drawn opinion to be found among recognized text writers in economics, corporation finance, accounting, investments and allied fields. To this can be added outstanding legal opinion and such modifications as the investigator himself sees fit to add if drawn from experience or logical reasoning. The resulting "generally accepted standards" will most certainly be open to attack and not acceptable to all. But they can reflect the best current thought, they can give definitive form to the assumptions upon which the investigation is based, and they can supply standards against which empirical evidence may be tested. If such standards are not supplied it is likely that issues and evidence will decline to a level of endless debate. In no small measure this is what happened in the T.N.E.C. investigation.

One further point should be mentioned. It may be a mistake to have investigations of economic matters directed by legal talent. Two difficulties are likely to be encountered. One is that the investigators may not be well informed regarding economic principles and technical details of the field. The other and more important

one is that lawyers are trained by their work to be frank regarding information they wish broadcast and adroit in side-tracking matters they wish kept quiet. This is not to say that all of the T.N.E.C. hearings and investigations or even a major part were *ex parte* proceedings. Not all of the investigators were lawyers! And not all participating lawyers followed the "advice of counsel" approach. Especially to be commended is Chairman O'Mahoney whose general supervision of the entire T.N.E.C. report showed a broad and dispassionate understanding. But one can not read the evidence submitted or note the general conduct of the hearings without also observing an undercurrent of one-sided, evasive argument.

THE EVIDENCE PRESENTED

The material and argument brought together in the T.N.E.C. reports are divided into two parts: hearings and monographs. The hearings aggregate 20,000 pages divided into 39 volumes beginning with an *Economic Prologue* and ending with a volume entitled *Final Report and Recommendations*. The monographs consume over 12,000 pages and consist of 43 separate studies of varying length. It is obviously impossible here even to enumerate the varied aspects of economic practice considered in these volumes. The range in space devoted to each topic is a wide one; so also the range in quality of evidence. In the hands of the well informed there is a wealth of worth-while information to be found within these volumes. It must, however, be dug out with care. Especially in the hearings, where the question-and-answer type of procedure was followed, extreme care must be exercised. As a rule, witnesses were anxious to disclose only those facts which would reflect favorably upon their business methods. All too often, examiners appeared anxious to draw from witnesses only evidence which would confirm some preconceived hypothesis. To sift fact from such testimony is not a task for the novice.

Despite the diverse character of the subject matter there are some

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common threads of thought which characterize the entire investigation. Being a study of control, it is concerned with intangible rather than tangible aspects of economic endeavor. Interest centers on claims or rights to wealth rather than on wealth itself. It is true the investigators were anxious to find means of increasing productive effort. But the means examined were not those of industrial efficiency, research, and the like but rather those of ownership control, management control, price rigidity, credit maladjustments. These elements were believed to hold back our best productive effort, shackles which somehow must either be shaken off or at least minimized in their restrictive effect.

Life insurance came in for extended consideration. Much evidence was presented on the size of companies, their growth in assets, scope of their investments, and their connections with industrial and financial companies. Here the main emphasis was on management control and credit control. The steel, petroleum, and building industries were also extensively considered with major emphasis on price control and management control. A single study in the monograph series devotes 1,550 pages to ownership control. It is entitled, "The Distribution of Ownership in the 200 Largest Nonfinancial Corporations." Other studies similarly emphasize the extent of existing concentration of economic control in one form or another.

THE ISSUES RAISED

The evidence presented in the T.N.E.C. reports shows rather conclusively a large measure of centralized, private economic control in this country. For the most part, this control is accomplished through corporate ownership. This raises one central issue: Should we break up the few mammoth corporations we now have in each industry into a larger number of smaller ones? This of course is on the assumption that a greater number of smaller corporations would yield greater competition,

less control, less price rigidity, more opportunity for the small enterpriser.

There is obviously no single or simple answer to this issue. The present war will probably result in greater concentration, certainly not less. Some industries, such as transportation and public utilities, we usually assume should not be pointed to more units and greater competition. What industries should be broken up? The answer is difficult.

In the summary volume of the T.N.E.C. report this issue is answered mainly in general terms. Slum clearance, low-cost housing, and similar social programs are approved; free competition is approved; joint studies by industry and labor to lessen the disturbing effects of technological change are approved; geographical decentralization of industry is approved; monopoly control of basic products is condemned; retail price-fixing laws and practices are condemned; the basing-point system of pricing steel and certain other products is condemned; interstate trade barriers are condemned; national standards for national corporations are approved. While the committee deals with these matters in more explicit form than these statements indicate, one can not escape the impression in reading their final recommendations that they are really more of an array of sub-issues than a definite program for improvement.

One thing seems clear. Beyond an investigation of this sort lies a vast area of detailed concrete problems which must be answered by unbiased technical experts before there can be real progress. The T.N.E.C. investigation may rightly be regarded as a sort of explosive initial step. To complete the job of rebuilding our economy along more competitive lines, some of the larger and tougher pieces left from this initial blast must be further analyzed. Then, piece by piece, and always with due regard to the whole structure as it will appear in revised form, long and careful cutting and fitting is required. This is not a part-time job nor one involving sensational disclosures. It is a composite

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task involving many minds, continuing and constructive in character. It is one to which we should be applying ourselves at the present time looking to the day when the present conflict will be over.

BANKING AFFAIRS

BY PAUL F. CADMAN

DIRECTOR, RESEARCH COUNCIL, AMERICAN BANKERS ASSOCIATION

GENERAL

In every financially important country in the world, banking was brought more and more under government domination during 1941, as governments relied to a large extent upon the expansion of bank credit and the absorption of institutional savings to finance extended defense, military, and extraordinary expenditures.

The American banking system cooperated fully with the United States Treasury and regulatory authorities and indicated willingness to place its entire resources, if these should be needed, at the disposal of the government to meet its emergency fiscal requirements.

REGULATING CREDIT

The Board of Governors of the Federal Reserve System issued regulations effective Sept. 1, 1941, governing the extension of instalment credit. This was announced as one means of preventing inflation. The Board also increased legal reserve requirements for member banks approximately one-seventh, to the limit of their statutory authority, effective Nov. 1, 1941. At the annual meeting of the American Bankers Association at Chicago, October 1941, Secretary of the Treasury, Henry Morgenthau, Jr. urged the bankers to exercise a selective control of credit, to curtail accommodations to non-defense industries as a means of preventing inflation, and at the same time to finance the defense and other essential industries to the full extent of their ability. Earlier in the year the Treasury had issued blanket orders freezing bank accounts and safe-deposit space of most aliens in the United States or American residents abroad. Transactions in these

accounts were permitted only under general or special licenses. An inventory of foreign property in the United States was also required of banks which held accounts of aliens. These controls were accompanied by increased hoarding of currency, the circulation of which increased more than \$2,000,000,000 in 1941.

MONEY RATES

Money rates decreased fractionally throughout 1941 although the rate of decline was not so abrupt as in the previous year. Throughout the world, war finance has been conducted at steadily falling interest rates.

BANK SUSPENSIONS

During the first nine months of 1941 there were five bank suspensions of which two were national and three insured banks not members of the Federal Reserve System. Deposits in the suspended banks aggregated \$2,500,000. Twenty-two banks suspended during the calendar year 1940.

BANKS AND DEPOSITS

The number of banks in the continental United States declined from 14,953 on June 29, 1940, to 14,855 on June 30, 1941. On the latter date there were 6,556 banks members of the Federal Reserve System, of which 5,130 were national banks and 1,426 state banks (including three mutual savings banks). Non-member banks included 547 mutual savings banks and 7,752 other non-member banks. However, the deposits of all banks, exclusive of interbank deposits, increased from \$60,582,000,000 to \$67,172,000,000. This increase of \$6,600,000,000 of deposits largely reflected an equal increase (\$6,600,000,000) in loans

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and investments of the banks. Loans were increased \$3,000,000,000 and investments \$3,600,000,000. There was an increase of more than \$1,000,000,000 in the monetary gold stock of the United States during the year 1941 but its effect upon bank deposits and bank reserves was more than offset by a withdrawal of about \$2,000,000,000 of currency for circulation or hoarding. This withdrawal of currency resulted in a net reduction of member bank reserve balances of approximately \$1,000,000,000 during the year. Notwithstanding this decline in the early months of the year, the action of the Board in raising reserve requirements effective Nov. 1, 1941 resulted in a reduction of excess reserves to \$3,400,000,000, compared with nearly \$7,000,000,000 at the beginning of the year. At the same time, the Board announced its intention of requesting additional powers of credit control if these were required to prevent an inflationary expansion of credit.

BANK LOANS

A survey of bank lending activity made by the American Bankers Association showed that a group of 5,001 commercial banks reporting in the two successive six-month periods of 1940, made 14,000,000 new loans totaling more than \$24,000,000,000 during the year; 11,000,000 renewal loans in the amount of \$15,000,000,000; and nearly 300,000 mortgage loans totaling almost \$1,000,000,000. These banks represented 35 per cent of the number of commercial banks in the United States and held approximately 70 per cent of deposits in all commercial banks.

LENDING POLICIES

The American Bankers Association, assembled in its annual convention at Chicago in September-October 1941, adopted the following resolutions concerning banking and economic policy:

"Bankers are aiding the Defense Program by loans for the erection of defense plants, and for the purchase of raw materials and the payment of wages in the defense industries. Such loans have reached huge sums and continue to mount.

"This Association recognizes the important assistance that may be rendered by sound credit in stimulating the increased production of 'Food and Feed for Defense.' Bankers will work with the farmers of this country to attain the higher production required. We reaffirm the position that in agricultural credit, as in other fields, government lending agencies should supplement and not supplant the banks.

"Banks are observing both the letter and the spirit of the new regulations for controlling instalment credit.

"This is a time for liberal lending for defense and for conservative lending for all other purposes. This is a time when in their own interest, people generally should be paying their debts instead of borrowing more.

"This particularly is a time for bankers to keep their own houses in order and to avoid credit expansion for excessive inventory accumulation or for other speculative purposes. This objective can be attained best through our voluntary cooperation rather than by government regulation.

DEFENSE SAVINGS BONDS

"Bankers endorse the effort of the government to borrow directly from its citizens through the sale of defense savings bonds, stamps, and tax anticipation notes. This is a sound step in resisting inflationary credit expansion. Banks are cooperating vigorously in the sale of these obligations as a public service and without profit. In their own self interest we urge all citizens to buy all three issues.

TAXATION

"Members of this Association commend the policy of the Federal Government in seeking to meet a large proportion of the cost of the defense effort through taxation. This is sound public policy.

"It is necessary, however, that in determining types and methods of taxation the burden should be distributed equitably over the whole population. Unless those who receive increased wages and profits from defense pay proportionate taxes, their

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spending will be inflationary. Unless all of the people share knowingly in paying Federal taxes, spending will become politically uncontrollable. Representation without taxation may be as vicious as taxation without representation.

"Equally is it necessary that the power of taxation must not be used to destroy enterprise, which is the only source both of taxes and of the unparalleled standard of living of this country. While a heavy burden of taxes may be necessary, each tax must be scrutinized to make sure that it does not destroy either enterprise itself or the incentive for enterprise.

PRICE CONTROL

"A policy of controlling inflation must include direct control not only over prices, but also over the cost elements which are the cause of prices. Such controls must be equitable. No pressure groups should be allowed to obtain unfair advantage over other citizens in a less favorable position to exert political pressure. We believe all of our people are prepared to co-operate in proposals which are fair and just to all, but we believe that complete cooperation is dependent upon the fairness and justice of the program adopted. There must be no exception; there must be equality of sacrifice.

NON-DEFENSE SPENDING

"This Association heartily approves the creation by the Congress of a Joint Committee to investigate Federal expenditures and to recommend the reduction of non-essential spending at this time of emergency. When men in the service, taxpayers, businessmen, and others are being asked for sacrifices, the agencies of Government themselves must demonstrate their willingness to sacrifice non-essential activities for the Defense Program.

GUIDING PRINCIPLES

"These times call for the old-fashioned virtues of working and saving. The bankers here assembled pledge

themselves, each in his own community, to work toward these ends.

"We are everlastingly grateful for the privilege of living in a democracy which holds fast to the principles of liberty and justice for all. We have unbounded faith in the resources and capacity of this country for meeting to the fullest its obligations in this trying hour. We have enduring confidence in the ability of the American people to preserve at any cost the rights and privileges which they enjoy in this free Republic.

"We pledge our full support to effective policies and programs of our government to defend and preserve democracy and democratic institutions."

BANK RESERVES AND LIABILITIES

The Comptroller of the Currency has reported the following composite statement of assets and liabilities of all active banks in the United States and possessions as of June 30, 1941:

THE AMERICAN BANKERS ASSOCIATION

The American Bankers Association, the national organization of banking, including in its membership 14,300 of the total of about 17,000 state commercial, national, savings banks, and trust companies, and other eligible institutions and organizations, held its 1941 convention at Chicago during late September and early October. Detroit was chosen as the 1942 convention city.

The officers of the Association elected for the year 1941-42 were: President, H. W. Koencke, president of The Security Bank of Ponca City, Ponca City, Okla.; First Vice President, W. L. Hemingway, president of the Mercantile-Commerce Bank and Trust Company, St. Louis; Second Vice President, A. L. M. Wiggins, president of the Bank of Hartsville, Hartsville, S. C.; Treasurer, W. F. Augustine, vice president of the National Shawmut Bank, Boston; Executive Manager, Harold Stonier, 22 East Fortieth Street, New York City.

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ASSETS AND LIABILITIES OF ALL ACTIVE BANKS IN THE UNITED STATES AND POSSESSIONS, BY CLASSES

(Close of business June 30, 1941)

(In thousands of dollars)

	Total All Banks	National Banks	All Banks Other Than National	Banks Other Than National		
				State (Commercial) ¹	Mutual Savings	Private
Number of banks.....	14,918	5,136	9,782	9,178	550	54
Assets						
Loans and discounts:						
Commercial and industrial loans.....	\$ 7,944,418	\$ 4,698,523	\$ 3,245,895	\$3,216,055	\$ 402	\$29,438
Agricultural loans.....	1,211,640	620,833	590,807	590,160	115	532
Open-market paper.....	638,008	361,117	276,891	263,950	9,420	3,521
Loans to brokers and dealers in securities.....	615,086	237,898	377,188	371,139	30	6,019
Other loans for the purpose of purchasing or carrying stocks, bonds, and other securities.....	726,371	355,985	370,386	364,020	667	5,699
Real estate loans:						
On farm land.....	601,598	233,956	367,642	352,181	15,051	410
On residential properties.....	7,931,331	1,456,662	6,474,669	1,671,308	4,801,591	1,770
On other properties.....	1,100,376	491,043	609,333	567,492	41,671	170
Loans to banks.....	45,777	20,436	25,341	25,341	.....	.....
All other loans.....	4,716,787	2,439,476	2,277,311	2,182,060	88,982	6,269
Overdrafts.....	12,046	6,554	5,492	4,948	38	506
Total loans and discounts.....	25,543,438	10,922,483	14,620,955	9,608,654	4,957,967	54,334
Investments:						
U. S. Government direct obligations.....	18,892,790	8,856,499	10,036,291	7,030,957	2,969,887	35,447
Obligations guaranteed by U. S. Government:						
Reconstruction Finance Corporation.....	1,532,277	548,294	983,983	846,825	131,373	5,785
Home Owners' Loan Corporation.....	1,743,519	1,046,672	489,847	489,396	205,819	1,632
Federal Farm Mortgage Corporation.....	605,095	279,849	325,246	237,980	67,093	173
Other Government corporations and agencies.....	803,380	404,638	398,742	342,351	51,852	4,539
Total U. S. Government obligations, direct and guaranteed.....	23,577,061	11,135,952	12,441,109	8,967,509	3,426,024	47,576
Obligations of States and political subdivisions.....	4,206,526	2,020,242	2,186,284	1,644,111	536,244	5,929

¹ Includes trust companies and stock savings banks.

BANKING AFFAIRS

	Total All Banks	National Banks	All Banks Other Than National	Banks Other Than National		
				State (Commercial) ¹	Mutual Savings	Private
Other bonds, notes, and debentures:						
U. S. Government corporations and agencies, not guar- anteed by United States:						
Federal land banks	\$ 182,756	\$ 100,984	\$ 81,772	\$ 73,264	\$ 4,667	\$ 3,841
Federal intermediate credit banks	199,523	110,866	88,657	84,748	3,203	706
Other Government corporations and agencies	190,793	111,872	78,921	76,972	1,373	576
Other domestic corporations:						
Railroads	1,508,727	449,558	1,059,169	418,495	639,613	1,061
Public utilities	1,061,543	306,258	755,285	295,592	457,735	1,958
Industrials	667,369	344,975	322,394	277,939	42,587	1,868
All other	204,031	68,556	135,475	102,104	32,777	594
Foreign—public and private	227,373	97,122	130,251	82,921	47,079	251
Total other bonds, notes, and debentures	4,242,115	1,590,191	2,651,924	1,412,035	1,229,034	10,855
Stocks of Federal Reserve banks and other domestic corporations	697,086	207,211	489,875	312,999	170,936	5,940
Stocks of foreign corporations	6,944	1,198	5,746	5,743	3	.....
Total investments	32,729,732	14,954,794	17,774,938	12,342,397	5,362,241	70,300
Currency and coin	1,408,306	709,458	698,848	620,896	76,281	1,671
Balances with other banks, including reserve balances and cash items in process of collection	25,471,008	13,812,200	11,658,808	10,720,782	891,847	46,179
Bank premises owned, furniture and fixtures	1,222,200	592,897	629,303	508,833	119,942	528
Real estate owned other than bank premises	834,353	96,568	737,785	238,503	498,304	978
Investments and other assets indirectly representing bank premises or other real estate	144,408	61,764	82,644	69,072	13,545	27
Customers' liability on acceptances outstanding	90,360	49,977	40,383	34,070	.....	6,313
Interest, commissions, rent, and other income earned or accrued but not collected	157,961	61,469	96,492	55,006	41,254	232
Other assets (including securities borrowed, insurance and other expenses prepaid, and cash items not in process of collection)	226,953	53,025	173,928	136,429	34,726	2,773
Total assets	87,828,719	41,314,635	46,514,084	34,334,642	11,996,107	183,335

X. BUSINESS AND FINANCE

	Total All Banks	National Banks	All Banks Other Than National	Banks Other Than National		
				State (Commercial) ¹	Mutual Savings	Private
Demand deposits:						
Deposits of individuals, partnerships, and corporations...	\$35,571,528	\$19,194,051	\$16,377,477	\$16,278,852	\$ 3,012	\$95,613
Deposits of United States Government.....	733,323	498,900	234,623	234,557	66	1,515
Deposits of States and political subdivisions.....	3,634,724	2,200,817	1,433,907	1,431,951	441	19,476
Deposits of banks in the United States.....	9,893,403	6,151,745	3,741,658	3,722,130	52	20,648
Deposits of banks in foreign countries.....	769,805	337,633	432,172	411,523	1	
Total demand deposits.....	50,602,983	28,383,146	22,219,837	22,079,013	3,572	137,252
Time deposits:						
Deposits of individuals, partnerships, and corporations:						
Savings deposits.....	23,988,580	7,152,681	16,835,899	6,244,300	10,584,220	7,379
Certificates of deposit.....	1,174,919	504,332	670,587	666,871	442	3,274
Deposits accumulated for payment of personal loans.....	129,477	55,138	74,339	73,867	472	961
Christmas savings and similar accounts.....	235,132	91,237	143,895	85,006	57,928	2,084
Open accounts.....	719,076	238,925	480,151	477,690	377	
Postal savings deposits.....	66,803	42,037	24,766	24,766		
Deposits of States and political subdivisions.....	505,305	328,362	176,943	175,937	810	196
Deposits of banks in the United States.....	311,919	96,944	214,975	214,607	167	201
Deposits of banks in foreign countries.....	7,304	5,323	1,981	1,981		
Total time deposits.....	27,138,515	8,514,979	18,623,536	7,965,025	10,644,416	14,095
Other deposits (certified and cashiers' checks (including dividend checks, letters of credit and travelers' checks sold for cash, and amounts due to reserve agents (transit account)).....)	807,831	453,178	354,653	352,962	501	1,190
Total deposits.....	78,549,329	37,351,303	41,198,026	30,397,000	10,648,489	152,537

BANKING AFFAIRS

	Total All Banks	National Banks	All Banks Other Than National	Banks Other Than National		
				State (Commercial) ¹	Mutual Savings	Private
Bills payable, rediscounts, and other liabilities for borrowed money.....	\$ 22,559	\$ 2,005	\$ 20,554	\$ 20,248	\$ 14	\$ 292
Acceptances executed by or for account of reporting banks and outstanding.....	106,594	59,379	47,215	40,094	.....	7,121
Interest, discount, rent, and other income collected but not earned.....	101,181	55,644	45,537	45,134	337	66
Interest, taxes, and other expenses accrued and unpaid.....	114,899	56,215	58,684	50,031	8,525	128
Other liabilities (including securities borrowed and dividends declared but not payable).....	409,638	191,948	217,690	192,532	21,811	3,347
Total liabilities.....	79,304,200	37,716,494	41,587,706	30,745,039	10,679,176	163,491
Capital Accounts						
Capital stock:						
Capital notes and debentures.....	113,311	.....	113,311	106,170	7,141	.....
Preferred stock.....	331,087	184,441	146,646	146,646	.....	.....
Common stock.....	2,610,607	1,338,942	1,271,665	1,264,755	.....	6,910
Surplus.....	3,616,763	1,336,090	2,280,673	1,396,448	872,796	11,429
Undivided profits.....	1,247,041	498,376	748,665	436,706	311,622	337
Reserves and retirement account for preferred stock and capital notes and debentures.....	605,710	240,292	365,418	238,878	125,372	1,168
Total capital accounts.....	8,524,519	3,598,141	4,926,378	3,589,603	1,316,931	19,844
Total liabilities and capital accounts.....	87,828,719	41,314,635	46,514,084	34,334,642	11,996,107	183,335

X. BUSINESS AND FINANCE

TRUST BUSINESS

By GILBERT T. STEPHENSON

THE GRADUATE SCHOOL OF BANKING, AMERICAN BANKERS ASSOCIATION

TRUST STATISTICS

The 78th annual report of the Comptroller of the Currency covering the year ended Oct. 31, 1940, contains the following table showing the changes in trust activities of national banks in 10 years.

TRUST ASSOCIATIONS

The Trust Division of the American Bankers Association, with headquarters at 22 East 40th Street, New York City, which is the National Association of Trust Institutions, has been in active operation since Sept. 24, 1896. The

	1930	1935	1940
Number of national banks with trust powers administering trusts	1,829	1,578	1,540
Gross earnings from trust departments	\$27,140,531	\$29,544,894	\$31,702,000
Number of individual trusts being administered	79,912	129,711	137,629
Total volume of individual trust assets	\$4,473,040,926	\$9,251,291,947	\$9,345,419,682
Number of corporate trusts being administered	11,511	16,801	16,273
Total amount of bond and note issues trusted	\$11,803,717,370	\$11,605,145,026	\$9,317,700,427
Number of insurance trusts being administered	396	1,048	1,606
Total volume of insurance trust assets	\$13,494,888	\$47,346,544	\$73,965,671

COMPOSITION OF TRUST FUNDS IN NATIONAL BANKS

The report also contains the following statement on the composition of trust funds in national banks at the end of the fiscal year, 1940: An analysis of the \$7,492,478,273 of invested trust funds belonging to private and court trusts under administration reveal that 50.59 per cent were in bonds, 30.83 per cent in stocks, 6.92 per cent in real estate mortgages, 7.38 per cent in real estate, and 4.28 per cent consisting of miscellaneous assets.

The foregoing figures relate to the trust business of national banks only. About one-half the corporations in the United States engaged in the trust business are national banks; the rest are state-chartered banks and trust companies. Many of the state-chartered banks and trust companies have been engaged in the trust business much longer than the national banks. But there are, as yet, no complete or nationwide statistics of the trust business of state-chartered banks and trust companies.

1941-42 officers of the Trust Division are President, Richard G. Stockton, Wachovia Bank and Trust Co., Winston-Salem, N. C.; Vice President, Louis S. Headley, The First Trust Co. of Saint Paul, Saint Paul, Minn.; Chairman, Executive Committee, Henry A. Theis, Guaranty Trust Co. of New York, New York City; and Secretary, Merle E. Selecman, American Bankers Association, 22 East 40th Street, New York City.

EXECUTIVE COMMITTEE

In addition to the above officers, the Trust Division has an Executive Committee of 18 members and 10 standing and three special committees, the members of the Executive Committee and the chairman for 1941-42 being as follows:

Samuel C. Waugh, The First Trust Co., Lincoln, Neb.; Roland E. Clark, National Bank of Commerce, Portland, Me.; Carl W. Fenninger, Provident Trust Co., Philadelphia; R. M. Alton, United States National Bank, Portland, Ore.; Preston B. Doty, The

TRUST BUSINESS

First National Bank, Beaumont, Tex.; James C. Shelor, Trust Company of Georgia, Atlanta; Henry A. Theis, Guaranty Trust Co. of New York; Joseph W. White, Mercantile-Commerce Bank and Trust Co., St. Louis; H. M. Bardt, Bank of America National Trust and Savings Association, Los Angeles, Calif.; Frederick A. Carroll, The National Shawmut Bank of Boston; H. Douglas Davis, The Plainfield Trust Co., Plainfield, N. J.; Arthur T. Leonard, City National Bank and Trust Co. of Chicago; John M. Wallace, Walker Bank and Trust Co., Salt Lake City, Utah; James W. Allison, Equitable Trust Co., Wilmington, Del.; B. B. Brown, American Trust Co., San Francisco; Clyde H. Doolittle, Iowa-Des Moines National Bank and Trust Co., Des Moines; William A. Stark, The Fifth Third Union Trust Co., Cincinnati; Raymond H. Trott, Rhode Island Hospital Trust Co., Providence.

CHAIRMEN OF STANDING AND SPECIAL COMMITTEES

Costs and Charges—Henry A. Theis, Guaranty Trust Co. of New York; Federal Legislation—Sidney F. Taliaferro, The Riggs National Bank, Washington, D. C.; Fiduciary Legislation—Roy C. Osgood, The First National Bank of Chicago; Liability Insurance for Fiduciaries—Robert G. Stephens, Central Hanover Bank and Trust Co., New York City; Relations with the Bar—Raymond H. Trott, Rhode Island Hospital Trust Co., Providence; Relations with Life Underwriters—Roy H. Booth, The National Shawmut Bank of Boston; Taxation—William A. Stark, The Fifth Third Union Trust Co., Cincinnati; Trust Education—James W. Allison, Equitable Trust Co., Wilmington, Del.; Trust Information—Fowler Phelan, St. Louis Union Trust Co., St. Louis; and Trust Policies—Frederick A. Carroll, The National Shawmut Bank of Boston.

Chairmen of special committees: Common Trust Funds—George C. Barclay, City Bank Farmers Trust Co., New York City; Operations for Trust Departments—Ronald M. Kim-

ball, Continental Illinois National Bank and Trust Co. of Chicago; and Trust Investments—C. Alison Scully, Bank of the Manhattan Co., New York City.

TRUST POLICIES

In 1933 the trust institutions of the United States adopted a Statement of Principles of Trust Institutions which, with ever increasing efficacy, serves as their code of ethics in the execution of their trust business.

In 1940 they adopted A Statement of Policies for the Acceptance of Trust Business, which is intended to serve as a guide to individual trust institutions in formulating their own statement of policies for the acceptance of trust business.

In 1941 they reached what may prove to be a third mile-stone in trust policies by adopting a report of the Committee on Trust Policies, suggesting that each trust institution formulate a statement of general policies for the conduct of its trust business. A copy of this report is published in *The Trust Bulletin*, 22 East 40th Street, New York City, for January 1942. The following are the points on which it is suggested trust institutions may wish to make statements of policy: serving with individual co-executors and co-trustees; dividing compensation with individual co-executors and co-trustees; providing in the instrument itself for compensation; reserving the right to decline appointments; trust instruments; safekeeping wills; importance of keeping wills revised and up to date; retaining original investments; carrying on businesses; retaining family lawyer and other professional representatives; and self-dealing.

RELATIONSHIPS BETWEEN LAWYERS AND TRUST INSTITUTIONS

During 1941 the American Bar Association and the American Bankers Association Trust Division adopted the following joint declaration of policies with regards to the relationships between lawyers and trust institutions:

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I. Trust institutions should neither perform services which constitute the practice of law nor otherwise engage in such practice; therefore, they should not draw wills or other legal documents nor perform services in the administration of estates and trusts where such acts by law or local procedure are considered the practice of law.

II. The development of trust business by a trust institution should be on the basis of assistance to the customer in the use of the institution's trust services and facilities as related to his business or financial matters.

In all legal questions which may arise in the development of trust business, the trust institution should advise the customer to confer with his own lawyer or a lawyer of his own choosing.

III. The trust institution should respect and not interfere with the professional relationship existing between an attorney and his client, and an attorney should respect and not interfere with the business relationship existing between a trust institution and its customer. It is recognized, however, that in all cases the interest of the client is paramount. An attorney at law must reserve the right to advise his client with respect to the choice of a fiduciary. The attorney should not seek to displace the institution of the client's choice by inducing the appointment of some other institution or individual unless the attorney believes the client's affairs demand services peculiar to some particular institution or individual, or where the attorney believes that the true interest of the client will suffer if such substitution is not made.

If the trust institution is requested by its customer to recommend counsel, any counsel so recommended should be in a position to advise the customer disinterestedly, and it is preferable that the trust institution, when making such recommendations of counsel to its customer, submit, without recommending one

above another, the names of several attorneys in whom it has confidence, leaving the choice of the selection to the customer.

IV. A trust institution, qualified and authorized by law as a legitimate business enterprise, has an inherent right to advertise its trust services in appropriate ways. It should not, directly or indirectly, offer to give legal advice or render legal services, and there should be no invitation to the public, either direct or by inference in such advertisement, to bring their legal problems to the trust institution. Its advertisement should be dignified and the qualifications of the institution should not be overstated or overemphasized, and it should not be implied in any advertisement that the services of a lawyer are only secondary or ministerial, or that by the employment of the services of the trust institution, the employment of counsel to advise the customer is unnecessary.

V. In the employment of counsel, the trust institution should endeavor, in the absence of compelling reasons to the contrary, to engage the attorney who drew the instrument, or who represented the testator or donor, to perform any legal work required in the course of trust or estate administration.

COMMON TRUST FUNDS

In the 1940 edition of *THE AMERICAN YEAR BOOK* (p. 407), the following common trust funds were reported: Security National Bank and Trust Co., St. Louis; Girard Trust Co., Philadelphia; Peoples-Pittsburgh Trust Co., Pittsburgh; The Pennsylvania Company for Insurances on Lives and Granting Annuities, Philadelphia; Fidelity-Philadelphia Trust Co., Philadelphia; and Provident Trust Co., Philadelphia.

Since then the following additional common trust funds have been reported: Germantown Trust Co., Philadelphia; Scranton-Lackawanna Trust Co., Scranton, Penn.; Wachovia Bank and Trust Co., Winston-Salem, N. C.; St. Louis Union Trust Co.;

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Union Trust Co., Butler, Penn.; Wilmington Trust Company, Wilmington, Del.; and Security Trust Co., Wilmington, Del.

During 1941, enabling acts, authorizing the establishment of common trust funds, were passed in Arizona, South Dakota, Florida, Massachusetts, and Michigan.

At the present time, trust institutions, under authority of statute or decision, may operate common trust funds in the following 18 states: Arizona, Delaware, Florida, Indiana, Kentucky, Louisiana, Massachusetts,

Michigan, Minnesota, Missouri, New York, North Carolina, Ohio, Oregon, Pennsylvania, South Dakota, Tennessee, and Vermont.

TRUST CONFERENCES

The 22nd Mid-Winter Trust Conference was held in New York City, Feb. 4-6, 1941; the 19th Regional Trust Conference of the Pacific Coast and Rocky Mountain States in Seattle, Wash., Aug. 6-8, 1941; and the 12th Mid-Continent Trust Conference in St. Louis, Nov. 6-7, 1941.

FOREIGN EXCHANGE

By MARCUS NADLER

PROFESSOR, NEW YORK UNIVERSITY

GENERAL

The foreign exchange market through the year 1941 was dominated by the European war. Trading in most European currencies in the American market was non-existent, and very often quotations of the exchanges of the European neutrals were only nominal. Wars invariably increase the powers of governments over business, and international financial transactions are among the first to feel the increased restrictions imposed by governments.

Even in the United States a form of exchange control was adopted when a large volume of foreign assets was frozen by the United States Treasury. This arrangement gave the United States Government the power to restrict the transfer of funds to a number of foreign countries. The countries involved under the freezing arrangement were Albania, Austria, Belgium, Bulgaria, China, Czechoslovakia, Danzig, Denmark, Finland, France, Germany, Greece, Hungary, Italy, Japan, Latvia, Lithuania, and Estonia, Liechtenstein, Luxembourg, Netherlands, Norway, Poland, Rumania, and Yugoslavia.

THE BRITISH EMPIRE

Throughout 1941 the pound sterling was stabilized at \$4.02½-\$4.03½. At

first the British Government maintained the stability of the pound through its own resources. Since the balance of trade of Great Britain with the United States became highly adverse, the British Government was forced not only to sell large amounts of American securities previously held by British nationals, but also to ship considerable amounts of gold. It was evident that the British dollar resources would soon be exhausted and that Great Britain would not be able to purchase the materials needed to carry on the war.

The Lease-Lend laws of the United States greatly eased the foreign exchange position of Great Britain. Two successive laws were passed by the Congress, fixing the amount which can be used for Lease-Lend purposes at \$12,985,000,000. During the year the exchange restrictions in existence in the British Empire were tightened and most of the international financial transactions of the far-flung British Commonwealth of Nations were handled through London. Actually this means that the entire British Empire, with the exception of Canada, has only one currency, namely, the pound. If individual members of the British Commonwealth of Nations have a surplus in their trade with Great Britain, with certain exceptions,

X. BUSINESS AND FINANCE

it leads to the accumulation of sterling balances in their favor. On the other hand, the dollar and other free foreign exchange balances that accrue to the members of the sterling block are with certain exceptions transferred to London, thus increasing the foreign exchange resources of the British Government. Through the war to date the currencies of the British Empire in relationship to one another have remained stable. Since the official rate of the pound in terms of dollars has also remained stable, the currencies of the entire sterling block in relationship to the dollar underwent no changes during the year.

THE GERMAN BLOCK

On the Continent of Europe practically all the exchanges were dominated by the policies of the Reich. With the exception of Sweden, Switzerland, Turkey, Spain, and Portugal, all countries in Europe during 1941 were conquered by the German military forces or were occupied by them. One of the first moves by the German Government was to organize the national economies of these respective countries so that they might best serve the interests of Germany. One of the first steps taken in this direction was to fix the rate of exchange of each individual country in relationship to the mark. These can be seen from the following table:

turn over large quantities of supplies to Germany, irrespective of whether these commodities were needed at home. Since Germany is not in a position to furnish them with commodities in exchange, the various subjugated countries are accumulating large mark balances in Berlin to be liquidated after the war. The German Government also endeavored to establish arrangements among the various countries so that all transactions may be cleared through Berlin.

The only European country which has not accumulated frozen marks but, on the contrary, owes a great deal of money to Germany, is France. The tribute imposed on France for the purpose of maintaining the German military forces of occupation was 400,000,000 francs per day, an amount by far greater than it cost the Germans to maintain their armies. The Reich in turn used this huge tribute partly to acquire large blocks of stocks of French industries. In addition, the former has a credit on the books of the Bank of France of over 60,000,000,000 francs.

In other countries conquered by Germany the same procedure was followed. The Germans, through the imposition of a tribute to defray the cost of the armies of occupation, acquired huge amounts of local currency and used them to buy everything that can be bought. In addition, the con-

EXCHANGE RATES FOR THE REICHSMARK IN OCCUPIED COUNTRIES

(Clearing rate for 1 reichsmark)

	Present Rate	Change Since 1939
Bulgaria.....	33 lev	No change, par with official rate
Greece.....	60 drachma	Raised by 26 per cent
Hungary.....	1.60 pengo	No change, 18 per cent premium over official rate
Rumania.....	60 lei	Raised by 50 per cent

(Berlin rates, per 100 units of foreign currency)

	Present Rate	Cross Rate Over London*
Belgium.....	Rm. 40.00	76.40
Denmark.....	Rm. 48.21	89.30
France.....	Rm. 5.00	11.35
Holland.....	Rm. 132.70	227.25

* Basis of conversion is £1 = Rm. 20

In many instances the mark was deliberately overvalued in order to enable the Germans to obtain the products of these countries at a low cost. Furthermore, all countries under German domination were forced to

quered countries were flooded with currency which had no backing. As a result of these developments, the foundation for a real paper money inflation has already been laid on the Continent of Europe and this condi-

FOREIGN EXCHANGE

tion promised to become worse during 1942.

LATIN AMERICA

The Latin American currencies, on the whole, remained stable in relationship to the dollar during the year, as may be seen from the following figures:

The stability of the Latin American currencies was achieved primarily through the assistance rendered by the United States Government to most

to assist them in stabilizing their currencies.

In addition the trade of the United States with the Latin American countries, as a result of the national defense efforts has undergone a great change. Whereas during the first nine months of 1940 the trade of this country with the Latin American nations showed an excess of exports over imports of \$79,000,000, during 1941 it showed an excess of imports over exports of \$92,000,000. Most Latin

LATIN-AMERICAN EXCHANGE RATES IN 1941

(In units of foreign currency per dollar)

Country	January	February	March	April	May	June	July	August	September	October
Argentina—paper peso										
Official "A".....	3.73	3.73	3.73	3.73	3.73	3.73	3.73	3.73	3.73	3.73
Free Market.....	4.23	4.24	4.33	4.28	4.22	4.22	4.21	4.20	4.23	4.24
Brazil—milreis										
Official.....	16.5	16.5	16.5	16.5	16.5	16.5	16.5	16.5	16.5	16.5
Free Market.....	19.77	19.77	19.77	19.77	19.764	19.716	19.69	19.69	19.69	19.678
Chile—peso										
Official.....	19.37	19.37	19.37	19.37	19.37	19.37	19.37	19.37	19.37	19.37
Free.....	31.15	31.15	31.15	31.15	31.15	31.15	31.15	31.15	31.15	31.15
Colombia—peso										
Controlled.....	1.75	1.75	1.755	1.75	1.75	1.755	1.755	1.755	1.755	1.755
Curb.....	1.93	1.92	1.92	1.89	1.89	1.86	1.85	1.84	1.80	1.80
Costa Rica—colon										
Uncontrolled rate.	5.75	5.77	5.85	5.89	5.93	6.01	5.96	5.85	5.77	5.82
Controlled rate...	5.62	5.62	5.62	5.62	5.62	5.62	5.62	5.62	5.62	5.62
Cuba—peso										
Free.....	.92	.93	.94	.96	.98	.99	.99	.99	1.00	1.00
Mexico—peso										
Free.....	4.85	4.85	4.85	4.86	4.86	4.86	4.87	4.86	4.86	4.86
Peru—sol										
Free.....	6.50	6.50	6.50	6.50	6.50	6.50	6.50	6.50	6.50	6.50
Uruguay*—peso										
Free.....	.3953	.3959	.3960	.4010	.4113	.4263	.4379	.4376	.4376	.4550
Controlled free...	.5266	.5266	.5266	.5266	.5266	.5266	.5266	.5266	.5266	.5266

* Quoted in cents per Uruguayan peso.

Latin American countries and by the huge purchases of all kinds of commodities in these countries by the United States. Through the Export-Import Bank, the United States Government placed dollar exchange at the disposal of most of them, which can be used either to facilitate trade with the United States, to develop the natural resources of the countries, or

American countries thus were in a position to accumulate considerable dollar balances, which has contributed greatly to the stability of their exchanges. In fact some of these Latin American countries were actually in a position to relinquish some of their foreign exchange restrictions. Since the demand for Latin American products in the United States is bound to

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increase as a result of the war, the trade of the Latin countries with the United States will continue to improve, thus further adding to their dollar balances.

THE MOVEMENT OF GOLD

The movement of gold during 1941 was not uniform. During the first four months, gold continued to come to this country on a large scale. However, from May, and particularly since the passage of the Lease-Lend laws, the inflow of gold to the United States has greatly decreased. The total inflow of gold to the United States during the first 11 months of 1941 aggregated \$939,000,000 as compared with \$4,744,472,000 for the year 1940 and \$3,574,151,000 for the year 1939. The only change of importance that occurred in this connection was the shipment of gold from the Soviet Union to the United States, which started after the German attack on Russia. Since, however, the United States Government has placed a credit of \$1,000,000,000 at the disposal of the Soviet Union, further large shipments of the yellow metal from Russia to the United States seemed unlikely.

A development of considerable interest as regards gold occurred toward the end of 1941 when some foreign countries began to convert dollar exchange into gold. Although it is not known for whose account the gold was earmarked, it is clear that it could have been done only for the account of some of the Latin American countries which have accumulated considerable dollar balances, or Switzerland and Portugal. The interesting feature of this transaction is that it indicates there are still countries which have confidence in gold as a standard of international value. The reason why some countries prefer gold as against dollar exchange is probably the fear of a further devaluation of the United States dollar. In view of the sharp increase in the public debt of the United States the opinion has often been expressed that sooner or later this may lead to a further devaluation.

Such a move, however, is not likely

to occur during the war. The dollar was depreciated in 1933 and devalued in 1934 for the purpose of stimulating an upward movement of commodity prices. At the close of 1941, however, the problem confronting the United States was just the reverse. Instead of being confronted with the task of bringing about an increase in commodity prices, the United States Government found it necessary to prevent prices from rising too sharply. During the war it is evident that commodity prices will work upward. The only time when the question of the future value of the dollar in terms of gold may arise will be after the war and when the currencies of the world are again placed on a sound basis. If at that time commodity prices in the United States should decrease sharply and prices in Europe should remain high, and particularly if some of the leading countries of the world were to stabilize their currencies at a level much lower than prevails now, then the danger of a further devaluation may arise. Until then, however, there is not the slightest chance of a further devaluation of the American currency.

Toward the end of the year the United States found itself at war with all the Axis Powers. This in turn necessitated the adoption of more stringent regulations concerning international financial transactions, and as the war progresses these restrictions are bound to become more rigid. The exchange market toward the end of the year, with the exception of the South American currencies, was practically at a standstill.

THE OUTLOOK

Under war conditions it is impossible to make any predictions as to the future. However, it is certain that, so long as the war is on, exchange restrictions in all belligerent countries will become tighter and the control of governments over all international financial transactions will be increased materially. The great problem that will confront the world when the war is over will be the restoration of normal currency conditions.

FOREIGN TRADE OF THE UNITED STATES

FOREIGN TRADE OF THE UNITED STATES

By GRACE A. WITHEROW

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GENERAL

The foreign trade of the United States rose during the first nine months of 1941 to new high levels for the war period as a result of further substantial increases in the exchange of goods with British countries, American republics, and other countries resisting aggression which more than counterbalanced the declines in trade with continental Europe and Japan. Aggregate dollar values advanced in the case of exports by 10 per cent to \$3,318,000,000 from \$3,027,000,000 in the first nine months of 1940, and in the case of imports, by 25 per cent to \$2,417,000,000 from \$1,942,000,000. The value of exports during the first three quarters of 1941 was larger than in any corresponding period since 1929; the value of imports larger than in any comparable period since 1937.

This review of United States foreign trade in 1941 is based on data for nine months ended September 1941, at which time the publication of detailed foreign trade figures was suspended for the duration of the war. Since Oct. 1, 1941, the Department of Commerce publishes only the total values of United States exports and imports. These over-all figures place total exports of merchandise for the year 1941 at approximately \$5,000,000,000 and imports at \$3,300,000,000, the largest values since 1929. Data by commodity and by country are not available, however, for the entire year.

WAR INFLUENCE ON FOREIGN TRADE

Wartime influences largely accounted for the shifts in United States foreign trade in 1941. As in the earlier phases of the conflict, the economic-warfare measures of the United Kingdom resulted in reduced shipments of many commodities, in-

cluding leading agricultural products, to that important market, although they stimulated exports of military supplies and other war essentials. Further, the extension during 1941 of the British blockade against Germany to include virtually the whole continent of Europe caused almost complete cessation of trade between the United States and that large trading area.

The notable extension of government control over United States foreign trade in order to strengthen national defense was, however, the outstanding development of the year. This action was authorized by Congress in the preceding year in the establishment of a system of licensed control over exports and in the provision for the acquisition of strategic materials. By the end of 1941 a majority of United States products were exported only under license, and shipments were limited to countries resisting aggression. Parallel with the export control system, the government's program for accumulation of strategic materials moved forward, and as a result substantial stocks of imported commodities, such as rubber and tin, are available in the United States.

The Lend-Lease aid given by the United States to countries resisting aggression contributed also to the high value of export trade in 1941. Under provision of the Lend-Lease Act of the United States, which became operative in March, foodstuffs and military supplies, valued at \$595,000,000, had been shipped abroad to various countries by Nov. 30.

To implement the regulation of commodity trade, the government provided financial assistance in the orderly marketing of Latin American products for which important world markets have been cut off. Moreover, control was assumed over for-

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EXPORTS, IMPORTS, AND BALANCE OF TRADE OF THE UNITED STATES

[Values in millions of dollars. Data cover years ended June 30 through 1915; thereafter, calendar years]

Yearly Average or Year	Merchandise						Excess of Exports (+) or Imports (-)			
	Exports			General Imports	Imports for Con- sump- tion	Per cent General Imports Were of Total Exports	Mer- chan- dise	Gold ¹	Silver	Mer- chan- dise, Gold, and Silver
	Total	United States Mer- chan- dise	Re- exports of Foreign Mer- chan- dise							
1876-80..	677	664	13	493	482	72.8	+184	-12	+9	+182
1881-85..	792	775	17	667	663	84.2	+125	-21	+11	+114
1886-90..	738	726	13	717	702	97.1	+21	+3	+13	+38
1891-95..	892	876	16	785	769	88.0	+107	+38	+20	+165
1896-1900	1,157	1,136	21	742	730	64.1	+416	-24	+27	+419
1901-5...	1,454	1,427	27	972	957	66.9	+482	+1	+23	+506
1906-10...	1,779	1,751	28	1,345	1,328	75.6	+434	-15	+14	+433
1911-15..	2,371	2,332	39	1,712	1,698	72.2	+658	-3	+23	+678
1910-14..	2,166	2,130	35	1,689	1,678	78.0	+477	+17	+20	+515
1913 ²	2,484	2,448	36	1,793	1,767	72.2	+691	+28	+27	+746
1915-20 ³ ..	6,521	6,417	105	3,358	3,289	51.5	+3,163	-149	+79	+3,093
1921-25...	4,397	4,310	87	3,450	3,423	78.5	+947	-235	+10	+692
1926-30...	4,777	4,688	89	4,033	4,020	84.4	+744	-33	+19	+729
1931-35...	2,025	1,989	36	1,713	1,704	84.6	+312	-480	-94	-262
1936-38...	2,967	2,925	42	2,489	2,461	83.9	+478	-1,559	-158	-1,239
1929.....	5,241	5,157	84	4,399	4,339	83.9	+842	-175	+19	+686
1930.....	3,843	3,781	62	3,061	3,114	79.6	+782	-280	+11	+514
1931.....	2,424	2,378	46	2,091	2,088	86.2	+334	-145	-2	+186
1932.....	1,611	1,576	35	1,323	1,325	82.1	+288	+446	-6	+729
1933.....	1,675	1,647	28	1,450	1,433	86.5	+225	+173	-41	+358
1934.....	2,133	2,100	33	1,655	1,636	77.6	+478	-1,134	-86	-742
1935.....	2,283	2,243	40	2,047	2,039	89.7	+235	-1,739	-336	-1,839
1936.....	2,456	2,419	37	2,423	2,424	98.6	+33	-1,117	-171	-1,254
1937.....	3,349	3,299	50	3,084	3,010	92.1	+265	-1,586	-80	-1,400
1938.....	3,094	3,057	37	1,961	1,950	63.4	+1,134	-1,974	-223	-1,063
1939.....	3,177	3,123	54	2,318	2,276	73.0	+859	-3,574	-71	-2,786
1940.....	4,021	3,934	87	2,625	2,541	65.3	+1,396	-4,744	-55	-3,403
Jan.-Sept. 1940...	3,027	2,962	66	1,942	1,872	64.1	+1,086	-3,951	-41	-2,906
1941...	3,318	3,237	81	2,417	2,316	72.9	+900	-839	-31	+31

¹ Increase or decrease in actual shipments; gold under earmark is not included.

² Data are for calendar year, except imports for consumption, which are for the year ended June 30, 1913.

³ Period July 1, 1915, to December 31, 1920.

eign exchange and financial transactions with many foreign countries and their nationals, and maritime transportation was directed to give precedence to wartime necessities over less essential exports and imports.

These various measures of defense largely account for the concentration

of United States foreign trade with British Empire and Latin American countries in 1941. They account also for the high proportion (85 per cent) of manufactured articles in export trade and the predominance of crude materials and semi-manufactures (65 per cent) in import trade.

FOREIGN TRADE OF THE UNITED STATES

UNITED STATES EXPORTS, BY ECONOMIC CLASSES AND PRINCIPAL COMMODITIES

(Value in millions of dollars)

Class and Commodity	1936-38 Average	1939	1940	January- September	
				1940	1941
			Value		
Total United States Merchandise....	2,925	3,123	3,934	2,962	3,237
Agricultural.....	778	655	517	430	373
Nonagricultural.....	2,147	2,468	3,418	2,531	2,864
Crude materials, total.....	661	528	456	382	225
Cotton, unmanufactured.....	319	243	213	189	52
Tobacco, unmanufactured.....	143	77	44	35	40
Coal and crude petroleum.....	148	155	150	120	103
Other.....	52	52	48	38	30
Foodstuffs, total.....	306	313	241	194	262
Meats, edible fats, and dairy products.....	48	60	52	42	115
Fruits and vegetables.....	98	98	54	43	49
Wheat, including flour.....	62	61	33	25	27
Feed grains (corn, oats, barley, rye).....	44	23	27	23	8
Other foodstuffs.....	54	70	75	61	65
Manufactures, including semimanufactures, total.....	1,958	2,282	3,238	2,386	2,750
Machinery, total.....	440	503	674	482	510
Metal-working.....	71	117	256	170	167
Other industrial.....	153	173	198	149	164
Electrical apparatus.....	102	105	117	86	97
Agricultural and implements.....	65	69	77	62	62
Aircraft, including parts.....	44	118	312	199 ¹	379 ¹
Automobiles, including parts.....	286	254	254	180	224
Iron and steel-mill products.....	199	236	516	376	348
Chemicals and related products excluding explosives ²	117	153	197	148	159
Firearms, ammunition and explosives.....	9	10	85	64	171
Petroleum products.....	253	292	242	191	132
Textile manufacturers, including yarns.....	87	113	132	101	130
Paper, paper manufacturers and wood pulp..	40	37	86	73	65
Copper ³ and brass.....	85	106	155	120	53
Other manufactured articles.....	398	461	584	452	579
Per Cent of Total United States Exports					
Total United States Merchandise....	100.0	100.0	100.0	100.0	100.0
Agricultural.....	26.6	21.0	13.1	14.5	11.5
Nonagricultural.....	73.4	79.0	86.9	85.5	88.5
Crude materials, total.....	22.6	16.9	11.6	12.9	6.9
Cotton, unmanufactured.....	10.9	7.8	5.4	6.4	1.6
Tobacco, unmanufactured.....	4.9	2.5	1.1	1.2	1.2
Coal and crude petroleum.....	5.0	5.0	3.8	4.0	3.2
Other.....	1.8	1.7	1.2	1.3	.9
Foodstuffs, total.....	10.5	10.0	6.1	6.6	8.1
Meats, edible fats, and dairy products.....	1.7	1.9	1.3	1.4	3.5
Fruits and vegetables.....	3.4	3.1	1.4	1.5	1.5
Wheat, including flour.....	2.1	2.0	.8	.9	.8
Feed grains (corn, oats, barley, rye).....	1.5	.7	.7	.8	.2
Other foodstuffs.....	1.8	2.2	1.9	2.1	2.0

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Class and Commodity	1936-38 Average	1939	1940	January- September	
				1940	1941
			Value		
	Per Cent of Total United States Exports				
Manufactures, including semimanufactures, total.....	66.9	73.1	82.3	80.6	85.0
Machinery, total.....	15.0	16.1	17.1	16.3	15.7
Metal-working.....	2.4	3.8	6.5	5.7	5.1
Other industrial.....	5.2	5.5	5.0	5.0	5.1
Electrical apparatus.....	3.5	3.4	3.0	2.9	3.0
Agricultural and implements.....	2.2	2.2	2.0	2.1	1.9
Aircraft, including parts.....	1.5	3.8	7.9	7.4 ¹	13.4 ¹
Automobiles, including parts.....	9.8	8.1	6.5	6.1	6.9
Iron and steel-mill products.....	6.8	7.5	13.1	12.7	10.7
Chemicals and related products excluding explosives ²	4.0	4.9	5.0	5.0	4.9
Firearms, ammunition and explosives.....	.3	.3	2.2	2.1	5.3
Petroleum products.....	8.6	9.4	6.2	6.4	4.1
Textile manufacturers, including yarns.....	3.0	3.6	3.3	3.4	4.0
Paper, paper manufacturers and wood pulp...	1.4	1.2	2.2	2.5	2.0
Copper ³ and brass.....	2.9	3.4	3.9	4.0	1.6
Other.....	13.6	14.8	14.9	14.7	16.4

¹ Data are for eight months ending August. Exports of aircraft not shown separately after August 1941.

² Chemical group minus phosphate rock and explosives.

³ Except ore.

FOREIGN TRADE VOLUME

The physical volume of export trade rose to a higher level in the first nine months of 1941 than during any comparable period since the World War of 1914-1918. The nine months' average was about 5 per cent above that of 1929, the previous peak in the intervening comparable periods, and 6 per cent above the 1940 volume. Although the trade in a number of individual commodities shifted lower than in the preceding year, for reasons growing out of the war situation, increased shipments of manufactured articles, particularly of aircraft and munitions, and of food-stuffs in the third quarter, were important counterbalancing factors in raising the total volume of exports. In terms of quantity, exports of United States merchandise in January-September 1941 were approximately one-third larger than in each of the corresponding periods of 1938 and 1939 preceding the outbreak of war.

The import volume in the first nine months of 1941 was about 20 per cent

above that of 1940, although about 3 per cent under the high 1937 figure. Imports of crude materials and semimanufactures were exceptionally large in 1941; but, since the trade in European manufactured articles and in competitive farm products was relatively small, the volume of total imports remained slightly under the large total of the first three quarters of 1937.

The increase in the total values of export and import trade, while largely the consequence of an expansion in the physical volume of shipments, reflected also a higher level of prices for goods moving in foreign trade. Prices of export and import commodities advanced moderately during 1941 after showing a considerable rise in the last quarter of 1939 and the early months of 1940, and in the first nine months of 1941 were on the average about 5 per cent above those in the first nine months of 1940 and 13 per cent above those in the corresponding months of 1939. The increase in prices of some import commodities in United States markets

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has been greater than this indicated rise, since United States prices reflect increased freight charges, higher insurance rates, and other factors not covered in foreign trade values. The change in prices as reported in foreign trade returns is, generally speaking, that shown in values, f.o.b. point of export. Export and import prices in 1941 were still lower, however, than in the '20's.

AGRICULTURAL AND NON-AGRICULTURAL EXPORTS

Non-agricultural items comprised nearly nine-tenths of United States export trade in the first nine months of 1941, as compared with approximately 70 per cent in the corresponding months of 1929 and 73 per cent in 1938. The total value of non-agricultural exports, consisting mainly of manufactured articles and crude minerals, rose by approximately 13 per cent from \$2,531,000,000 in the first nine months of 1940 to \$2,864,000,000 in the corresponding period of 1941. The major part of the increase of \$333,000,000 for this group of commodities was accounted for by larger shipments of such items as aircraft, motor trucks, explosives and munitions, all of which showed marked gains. Exports of coal, cotton manufactures, and industrial machinery were also larger in value than in the corresponding months of the preceding year, while other items which showed marked increases during 1939 and 1940, such as metal-working machinery and heavy steel products, maintained approximately the 1940 level. Shipments of other leading commodities—non-ferrous metals, steel scrap, and petroleum and products—dropped off substantially in 1941 from the high levels of 1940.

The proportional share of agricultural commodities in export trade dropped during the first nine months of 1941 to an unusually low level—from 30 per cent of total United States exports in the comparable period of 1929 and 27 per cent in 1938 to 11 per cent in the current period. With the important markets in Europe for agricultural commodities

largely closed to American products and with British purchases concentrated largely in war materials, the value of total agricultural exports decreased by 13 per cent in January-September 1941 as compared with the first nine months of 1940. Although comparatively large Lend-Lease shipments of certain foodstuffs made during the months from July to September are included in the export total, the aggregate value of agricultural exports nevertheless declined from \$430,000,000 to \$373,000,000. This drop was partly a consequence of small exports of cotton, which, because of wartime conditions, have moved in unusually small volume. There were reductions also in exports of fresh fruit, canned fruit, and grain, while exports of tobacco increased only slightly over the low level of last year.

CRUDE MATERIALS AND SEMI-MANUFACTURES

Crude materials and semi-manufactured products comprised 65 per cent of total United States imports in the first nine months of 1941. This proportion, the highest of record, compares with 57 per cent in the corresponding months of 1929 and with 52 per cent during the comparable period of 1939 preceding the present war.

The total value of imports of crude materials and semi-manufactures increased by approximately 33 per cent from \$1,134,000,000 in the first nine months of 1940 to \$1,513,000,000 in the first nine months of 1941. Among individual commodities, imports of non-ferrous ores and metals advanced by 64 per cent to a value of \$322,000,000, crude rubber by 39 per cent to \$311,000,000, and raw wool by 189 per cent to \$163,000,000. These three commodities comprised approximately 34 per cent of total imports in the first nine months of 1941, as compared with 25 per cent in the corresponding months of 1940 and 17 per cent in the same months of 1939. Other leading commodities imported in markedly increased amounts included undressed fur skins, spruce

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UNITED STATES IMPORTS BY ECONOMIC CLASSES AND PRINCIPAL COMMODITIES

(Value in millions of dollars)

Class and Commodity	1936-38 Average	1939	1940	January- September	
				1940	1941
			Value		
Total Imports for Consumption.....	2,461	2,276	2,541	1,872	2,316
Agricultural.....	1,259	1,118	1,285	947	1,218
Nonagricultural.....	1,202	1,158	1,255	925	1,098
Crude Materials, total.....	760	745	1,011	718	990
Crude rubber.....	179	178	318	223	311
Raw silk.....	99	121	125	80	59
Undressed furs.....	65	50	74	54	72
Hides and skins.....	52	47	50	38	57
Wool, unmanufactured.....	57	50	85	57	163
Non-ferrous ores and concentrates ¹	32	33	68	46	82
Other crude materials.....	276	267	291	220	246
Foodstuffs, total.....	720	604	563	428	502
Cane sugar.....	152	125	113	94	117
Coffee.....	141	140	127	96	116
Fruits, nuts and vegetables.....	81	76	78	57	60
Wines, whisky and other spirits.....	69	57	53	36	37
Meats, fats and dairy products.....	47	41	26	21	20
Grain (wheat, corn, oats, rye, barley).....	54	8	12	9	15
Other foodstuffs.....	177	157	154	115	137
Semimanufactures, total.....	503	487	559	416	523
Tin (bars, blocks, pigs).....	75	71	128	91	121
Copper.....	35	41	68	49	90
Wood pulp.....	85	76	60	48	47
Vegetable oils (expressed), inedible.....	57	34	49	42	33
Nickel and alloys.....	17	25	35	25	28
Other semimanufactures.....	234	240	218	162	203
Finished manufactures, total.....	478	440	409	310	301
Paper and manufactures.....	120	127	133	99	100
Burlaps.....	35	28	45	36	34
Cotton manufactures.....	42	38	29	22	16
Flax, hemp and ramie manufactures.....	27	21	19	14	12
Wool manufactures.....	20	19	19	14	14
Other manufactures.....	234	208	164	126	125
Per Cent of Total United States Imports					
Total Imports for Consumption.....	100.0	100.0	100.0	100.0	100.0
Agricultural.....	51.2	49.1	50.6	50.6	52.6
Nonagricultural.....	48.8	50.9	49.4	49.4	47.4
Crude Materials, total.....	30.9	32.7	39.8	38.4	42.7
Crude rubber.....	7.3	7.8	12.5	11.9	13.4
Raw silk.....	4.0	5.3	4.9	4.3	2.5
Undressed furs.....	2.6	2.2	2.9	2.9	3.1
Hides and skins.....	2.1	2.1	2.0	2.0	2.5
Wool, unmanufactured.....	2.3	2.2	3.3	3.0	7.1
Non-ferrous ores and concentrates ¹	1.3	1.4	2.7	2.5	3.5
Other crude materials.....	11.2	11.7	11.5	11.8	10.6

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Class and Commodity	1936-38 Average	1939	1940	January- September	
				1940	1941
				Value	
Per Cent of Total United States Imports					
Foodstuffs, total.....	29.2	26.5	22.1	22.9	21.8
Cane sugar.....	6.2	5.5	4.5	5.0	5.1
Coffee.....	5.7	6.1	5.0	5.2	5.0
Fruits, nuts and vegetables.....	3.3	3.4	3.1	3.0	2.6
Wines, whisky and other spirits.....	2.8	2.5	2.1	1.9	1.6
Meats, fats and dairy products.....	1.9	1.8	1.0	1.1	.9
Grain (wheat, corn, oats, rye, barley).....	2.2	.4	.5	.5	.6
Other foodstuffs.....	7.2	6.9	6.0	6.1	5.9
Semimanufactures, total.....	20.4	21.4	22.0	22.3	22.6
Tin (bars, blocks, pigs).....	3.0	3.1	5.0	4.9	5.2
Copper.....	1.4	1.8	2.7	2.6	3.9
Wood pulp.....	3.4	3.3	2.4	2.5	2.0
Vegetable oils (expressed), inedible.....	2.3	1.5	1.9	2.2	1.4
Nickel and alloys.....	.7	1.1	1.4	1.3	1.2
Other semimanufactures.....	9.5	10.6	8.6	8.6	8.8
Finished manufactures, total.....	19.4	19.3	16.1	16.5	13.0
Paper and manufactures.....	4.9	5.6	5.2	5.3	4.3
Burlaps.....	1.4	1.2	1.8	1.9	1.5
Cotton manufactures.....	1.7	1.7	1.1	1.2	.7
Flax, hemp and ramie manufactures.....	1.1	.9	.7	.7	.5
Wool manufactures.....	.8	.8	.7	.7	.6
Other manufactures.....	9.5	9.1	6.5	6.7	5.4

¹ Including those used in the manufacture of iron and steel.

and fir lumber, ferro-alloying ores, hides and skins, and hard fibers.

Imports of a few leading crude materials and semi-manufactures declined in 1941. Raw silk imports from Japan fell off sharply after the orders of July 26 froze Japanese funds in this country, and imports of cut diamonds and of vegetable oils from Europe have been small since the middle of 1940.

FOOD STUFF DISTRIBUTION

Foodstuffs imports, amounting to \$502,000,000, showed an increase of 17 per cent over their value in the period January-September 1940. Because this gain was smaller than that shown for total imports, however, the share of the foodstuff group in total imports fell to 22 per cent in the first nine months of 1941 as compared with 23 per cent in the first nine months of 1940 and 27 per cent in the

first nine months of 1939. The quantity of all principal imported foods, such as coffee, cane sugar, cocoa, and tea, was larger than in the corresponding months of both 1939 and 1940.

Imports of other food products, including cheese, wines, fish, and edible vegetable oils, showed marked declines in the first nine months of 1941. With access to many of the important European suppliers of these foodstuffs completely cut off and with previously imported stocks in this country low or depleted, the imports represent, in some instances, shipments from new sources. For example, imports of cheese from Argentina have grown from 3,177,000 pounds, valued at \$434,000, in the first nine months of 1940 to nearly 14,000,000 pounds, valued at \$2,432,000, in the first nine months of 1941, and imports of wines have increased from approximately 6,300 gallons,

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valued at \$9,600, to 315,000 gallons, valued at \$670,000.

MANUFACTURES

Articles classed as manufactures, including newsprint and burlap, comprised only 13 per cent of total United States imports in January-September 1941, as compared with 17 per cent in the corresponding period of 1940 and 20 per cent previous to the war. The total value of imports of manufactures dropped slightly, from \$310,000,000 in the first nine months of 1940 to \$301,000,000 in the first nine months of 1941, primarily because many continental European sources were inaccessible. The value of total imports of finished manufactures from the continent of Europe dropped from \$58,000,000 in the first nine months of 1940 to \$30,000,000, a decline largely counterbalanced, however, by increases in imports of newsprint (from Canada) and of other articles from areas outside Europe. Switzerland provided approximately three-fifths of the imports of manufactured articles received from the continent of Europe in January-September 1941.

Percentage decreases from 1940 to 1941 in leading manufactures customarily obtained largely in Europe are here listed, together with the indicated value of these imports in the first nine months of 1941: calf and kid leather, 34 per cent to \$965,000; leather gloves, 75 per cent to \$275,000; bulbs, roots, corms, 27 per cent to \$387,000; cotton gloves, 20 per cent to \$342,000; cotton machine-made laces, 71 per cent to \$638,000; cotton floor coverings, 72 per cent to \$640,000; cigarette paper, 66 per cent to \$719,000; and cameras, 42 per cent to \$381,000. The amounts cited represent imports for consumption and, therefore, include withdrawals of goods from previously imported stocks held in bonded customs warehouses in this country. In most instances the imports of these manufactures consisted primarily of goods furnished by the United Kingdom and other countries which still had access to United States markets.

TRADE DISTRIBUTION IN BRITISH EMPIRE AND LATIN AMERICA

British Empire and Latin American trade was chiefly responsible for the increased volume of foreign trade in 1941, as indicated by the data in the accompanying table.

Exports, including re-exports, to the British Empire rose in the first three quarters of 1941 to \$2,105,000,000 or 43 per cent higher than in January-September 1940, the extraordinary increase resulting in large measure from Britain's demands for metals and certain manufactured goods essential to the conduct of war. Deliveries of merchandise to the American Republics advanced 15 per cent above the level of January-September 1940 to \$625,000,000. The United States provided the American countries with their usual leading purchases of machinery and automobiles and, to a considerable extent, replaced supply sources no longer available because of war conditions. Imports from British Empire countries, valued at \$1,084,000,000, and from Latin America, placed at \$716,000,000, also showed marked gains.

In the period January-September 1941, trade with Empire countries and the American Republics accounted for 82 per cent of total exports of the United States and for 75 per cent of total imports. The British countries took 64 per cent of United States exports and supplied 45 per cent of imports, as compared with 42 per cent and 34 per cent, respectively, in the comparable pre-war periods of 1938 and 1939. The American republics took 19 per cent of total exports as compared with 16 per cent and furnished 30 per cent of imports as compared with an average of 23 per cent in January-September of 1938 and 1939.

CONTINENTAL EUROPE

Because of the progressive shrinkage in the areas open to overseas trade, exports to continental Europe fell off from \$589,000,000 in the first nine months of 1940 to \$125,000,000, or only 4 per cent of total United States exports, in the corresponding

FOREIGN TRADE OF THE UNITED STATES

VALUE OF FOREIGN TRADE OF THE UNITED STATES, BY AREAS AND LEADING COUNTRIES

(In millions of dollars)

Area and Country	Exports, Including Reexports					General Imports				
	Year			January-September		Year			January-September	
	1936-38 Average	1939	1940	1940	1941	1936-38 Average	1939	1940	1940	1941
Total.....	2,967	3,177	4,021	3,027	3,318	2,489	2,318	2,625	1,941	2,417
British Empire and										
Egypt.....	1,255	1,293	2,113	1,487	2,228	901	836	1,138	830	1,091
American Republics ¹	489	569	727	543	625	543	518	620	464	716
Continental Europe ²	727	773	624	581	118	532	464	227	194	106
Other Areas.....	496	542	557	416	347	513	500	640	453	504
Europe.....	1,243	1,290	1,645	1,287	1,149	709	617	390	321	212
North America:										
Canada and Newfoundland.....	462	498	725	519	687	352	349	437	310	404
Southern North America.....	270	304	341	242	331	248	231	256	209	298
South America.....	274	329	436	338	331	325	317	395	280	470
Asia.....	499	562	619	459	452	748	700	981	705	807
Oceania.....	91	80	94	72	77	40	27	35	22	120
Africa.....	128	115	161	111	290	66	77	131	95	107
Europe:										
Scandinavia.....	106	169	83	75	21	93	88	32	30	10
Belgium and Netherlands.....	158	162	59	59	1	13	92	38	34	8
Germany ³ and Italy	217	125	51	51	3	170	108	29	28	4
France.....	143	182	252	252	2	65	62	37	33	4
U. S. S. R.....	49	57	87	63	48	25	25	21	16	21
United Kingdom...	499	505	1,011	698	1,024	174	149	155	121	101
North America:										
Canada.....	454	489	713	511	675	345	340	424	301	391
Mexico.....	83	83	97	67	105	53	56	76	60	71
Cuba.....	79	82	85	62	81	127	105	105	88	134
South America:										
Argentina.....	79	71	107	91	66	82	62	83	60	124
Brazil.....	60	80	111	83	94	107	107	105	73	116
Chile.....	21	27	43	33	36	34	41	65	47	77
Colombia.....	36	51	38	44	48	48	49	48	37	33
Venezuela.....	41	62	69	53	42	23	24	42	27	37
Asia:										
Western Asia.....	28	30	28	22	18	29	34	35	24	22
British India, including Burma...	35	47	76	54	86	75	67	104	81	86
British Malaya....	8	10	16	11	32	174	149	268	194	267
China.....	44	56	78	62	62	75	62	93	70	66
Japan.....	244	232	227	165	58	168	161	158	104	76
Netherlands Indies.	22	35	54	35	79	85	93	169	124	163
Philippine Islands..	77	100	93	74	81	107	92	90	68	73
Oceania and Africa:										
Australia.....	67	62	75	57	57	25	15	26	15	106
British South Africa	78	70	106	72	126	15	33	56	42	45
Egypt.....	12	14	21	15	122	10	7	7	5	6

¹ Includes Canal Zone.

² Including U. S. S. R. in Asia, but excluding Turkey in Europe, Gibraltar, United Kingdom, Ireland, Iceland, Azores and Madeira Islands, and Malta, Gozo, and Cyprus.

³ Including Austria, Czecho-Slovakia, Poland and Danzig.

period of 1941. The decline in imports was similarly large, with goods received from continental Europe dropped from \$200,000,000 to \$111,000,000, or to 5 per cent of total imports.

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PERCENTAGE DISTRIBUTION OF EXPORTS AND IMPORTS, BY AREAS AND LEADING COUNTRIES

Area and Country	Per Cent of Total United States Exports					Per Cent of Total United States Imports				
	Year			January-September		Year			January-September	
	1936-38 Average	1939	1940	1940	1941	1936-38 Average	1939	1940	1940	1941
Total.....	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
British Empire and Egypt.....	42.3	40.7	52.6	49.1	67.1	36.2	36.1	43.3	42.8	45.1
American Republics ¹	16.5	17.9	18.1	17.9	18.8	21.8	22.3	23.6	23.9	29.6
Continental Europe ²	24.5	24.3	15.5	19.2	3.5	21.4	20.0	8.7	10.0	4.4
Other Areas.....	16.7	17.1	13.8	13.8	10.6	20.6	21.6	24.4	23.3	20.9
Europe.....	41.9	40.6	40.9	42.5	34.6	28.5	26.6	14.9	16.5	8.8
North America:										
Canada and Newfoundland.....	15.6	15.7	18.0	17.1	20.7	14.1	15.1	16.6	16.0	16.7
Southern North America.....	9.1	9.6	8.5	8.0	10.0	10.0	10.0	9.8	10.8	12.3
South America.....	9.2	10.4	10.8	11.1	10.0	13.1	13.7	15.0	14.4	19.4
Asia.....	16.8	17.7	15.4	15.2	13.6	30.1	30.2	37.4	36.3	33.4
Oceania.....	3.1	2.5	2.3	2.4	2.3	1.6	1.2	1.3	1.1	5.0
Africa.....	4.3	3.6	4.0	3.7	8.8	2.7	3.3	5.0	4.9	4.4
Europe:										
Scandinavia.....	3.6	5.3	2.1	2.5	.6	3.7	3.8	1.2	1.5	.4
Belgium and Netherlands.....	5.3	5.1	1.5	1.9	.3	.5	4.0	1.4	1.7	.3
Germany ⁴ and Italy.....	7.3	3.9	1.3	1.7	.3	6.8	4.7	1.1	1.4	.1
France.....	4.8	5.7	6.3	8.3	.1	2.6	2.7	1.4	1.7	.2
U. S. S. R.....	1.6	1.8	2.2	2.1	1.4	1.0	1.1	.8	.8	.9
United Kingdom.....	16.8	15.9	25.1	23.1	30.9	7.0	6.4	5.9	6.2	4.2
North America:										
Canada.....	15.3	15.4	17.7	16.9	20.4	13.9	14.7	16.1	15.5	16.2
Mexico.....	2.8	2.6	2.4	2.2	3.2	2.1	2.4	2.9	3.1	2.9
Cuba.....	2.7	2.6	2.1	2.0	2.4	5.1	4.5	4.0	4.5	5.5
South America:										
Argentina.....	2.7	2.2	2.7	3.0	2.0	3.3	2.7	3.2	3.1	5.1
Brazil.....	2.0	2.5	2.8	2.7	2.8	4.3	4.6	4.0	3.8	4.8
Chile.....	.7	.8	1.1	1.1	1.1	1.3	1.7	2.5	2.4	3.2
Colombia.....	1.2	1.6	1.3	1.3	1.3	1.9	2.1	1.8	1.9	1.4
Venezuela.....	1.4	2.0	1.7	1.8	1.3	.9	1.0	1.6	1.4	1.5
Asia:										
Western Asia.....	1.0	1.0	.7	.7	.5	1.2	1.5	1.3	1.3	.9
British India, including Burma.....	1.2	1.5	1.9	1.8	2.6	3.0	2.9	4.0	4.2	3.6
British Malaya.....	.3	.3	.4	.4	1.0	7.0	6.4	10.2	10.0	11.1
China.....	1.5	1.8	1.9	2.1	1.9	3.0	2.7	3.5	3.6	2.7
Japan.....	8.2	7.3	5.7	5.5	1.7	6.7	7.0	6.0	5.4	3.1
Netherlands Indies.....	.7	1.1	1.3	1.2	2.4	3.4	4.0	6.4	6.4	6.7
Philippine Islands.....	2.6	3.1	2.3	2.4	2.5	4.3	4.0	3.4	3.5	3.0
Oceania and Africa:										
Australia.....	2.3	1.9	1.9	1.9	1.7	1.0	.6	1.0	.8	4.4
British South Africa.....	2.6	1.2	2.6	2.4	3.8	.6	1.4	2.1	2.2	1.8
Egypt.....	.4	.4	.5	.5	3.7	.4	.3	.3	.3	.3

¹ Includes Canal Zone.

² Including U. S. S. R. in Asia, but excluding Turkey in Europe, Gibraltar, United Kingdom, Ireland, Iceland, Azores and Madeira Islands, and Malta, Gozo, and Cyprus.

³ Less than one-tenth of one per cent.

⁴ Including Austria, Czecho-Slovakia, Poland and Danzig.

FAR EAST

Trade between the United States and Japan in 1941 prior to the inter-

ruption following the freezing of Japanese funds in July resulted in exports to Japan of \$58,000,000 and in imports valued at \$76,000,000. These

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amounts represented declines of 65 per cent and 27 per cent, respectively, as compared with the first three quarters of 1940, when the trade was still relatively large. Exports to China were of about the same volume—\$62,000,000—as in the first nine months of 1940, and imports from that country, at \$66,000,000, were down only slightly. Nevertheless, Japan, China, and Kwantung, as a group, were the

destination for less than 4 per cent of total United States exports in the period January-September 1941, or for less than half the proportion taken by them in the comparable periods of 1938 and 1939. The area supplied about 6 per cent of total United States imports, approximately one-third less than in the corresponding periods of the immediately preceding years.

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GENERAL

Official wartime controls, which prior to the end of 1940 had begun to exert far-reaching influence upon the composition and distribution of United States foreign trade, were broadened and tightened throughout 1941. Though the country did not formally enter the war until December, the measures already in effect had determined in large degree the pattern of our economic wartime defense. The process of subjecting the external trade and financial relations of the United States to official regulation and control has resulted in important structural changes in the balance of international payments. These changes, already reflected in our international accounts during 1940, had a more pronounced effect during 1941 as evidenced by the complete reversal of trends in certain international movements which had characterized the balance of payments virtually without interruption since 1934.

The gradual tightening of official controls during 1941 centered in a series of measures which, though differing in methods of administration, were pointed to a common general objective, namely, the economic defense of the United States. In some cases the measures were restrictive and were designed to prevent transactions which would directly or indirectly aid the Axis Powers; in others, stimulus was given to transactions which were

aimed to benefit the Democratic Powers engaged in war against the Axis. The export licensing control system, established in July 1940, was enlarged and supplemented in 1941 by procedures which sought to meet both government needs and non-government requirements of the American Republics and certain other countries. Foreign funds control, established in April 1940 when Germany invaded Denmark and Norway and subsequently extended to other countries falling under Axis control, was applied to the Axis countries themselves in June 1941, thus adding certain objectives which were not inherent in "freezing" control so long as it applied only to occupied territory.

The passage of the Lease-Lend Act on March 11, the conclusion of a series of arrangements for the purchase of strategic and essential raw materials, and the approval of the Ship Warrants Act on July 14, completed the more important steps in the system of official commercial and financial controls which during 1941 developed into a closely integrated mechanism of economic warfare.

STRUCTURE OF THE BALANCE OF PAYMENTS

The merchandise export balance of considerably more than \$1,500,000,000 in 1941 was in substantial part made possible by shipments under the provisions of the Lease-Lend Act. In

contrast with other recent years when exports exceeded imports by large margins, the inflow of gold played a relatively unimportant part in the financing of these shipments. Since British gold reserves had been virtually depleted before the end of 1940, new means had to be found during 1941 for providing the dollar funds essential to the continued movement of war supplies and foodstuffs to countries aided in accordance with the economic defense strategy of the United States. The liquidation of British-owned American securities, which had begun in 1940, continued as a source of dollar funds during 1941 and was climaxed by the pledging of securities valued at \$450,000,000 as collateral for a loan of \$425,000,000 granted by the Reconstruction Finance Corporation.

The exhaustion of Britain's gold reserves and the limited potentialities of available dollar assets in the form of cash balances and securities necessitated a new approach to the problem of supplying friendly countries with essential foodstuffs and war materials. Efforts to deal with this problem in its bearing upon this country's defense strategy culminated in the Lease-Lend Act of March 11. This legislation provided, in effect, a substitute for the previous gold imports which since 1937 had represented a relatively important source of dollar funds for meeting the large merchandise export balance. The gold inflow during 1941 was virtually limited to new production within the British Empire. Gold held in non-Empire reserves was in large part immobilized by the fortunes of war on the Continent of Europe. A combination of factors had terminated the inward gold movement of earlier years which had at times been related to the flight of capital from Europe to the United States and more recently to the growing need of United States war materials and other commodities.

As a consequence of these developments the net gold inflow during 1941 fell below \$1,000,000,000 for the first time since 1933 when an actual net outflow had occurred. The net in-

ward capital movement of former years, which had persisted since 1934, was actually reversed in 1941, largely because of British liquidation of American securities. The net dollar balances normally accruing to foreigners from various "invisible" transactions, such as remittances, travel expenditures, and shipping services, were still further diminished below the relatively low levels of 1940.

MERCHANDISE TRADE VALUES

Merchandise exports during the first 11 months of 1941 amounted to \$4,492,000,000, while imports during the same period were \$3,002,000,000. These figures indicate that the total value of the country's foreign trade in 1941 is certain to be the highest since 1929. The increase in the value of exports and imports during the January-November period over the respective totals of \$4,021,000,000 and \$2,625,000,000 for the full calendar year, 1940, reflects, on the one hand, the growth in the shipments of war materials and, on the other, the increase in purchases abroad of raw materials and other essential commodities as this country's productive efforts are becoming increasingly geared to the requirements of a war economy.

GEOGRAPHIC DISTRIBUTION

These respective impulses underlying our export and import trade in 1941 are reflected in the geographic distribution of the year's merchandise exports and imports. Despite the marked increase in total exports the value of shipments to the Axis countries and to areas under Axis control, which had in some instances fallen to very low levels during the first year of the war, declined further in 1941. Exports to Continental Europe during the first nine months of 1941 amounted to only \$117,000,000 as compared with \$581,000,000 during the corresponding period of 1940. Shipments to Japan came to a virtual standstill when that country's occupation of French Indo-China led to the "freezing" of Japanese dollar assets on July 26. Prior to that time the exportation of certain important commodities had

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been placed under embargo. As a result United States exports to Japan during the January-September period of 1941 amounted to only \$53,000,000 in value as compared with shipments valued at \$165,000,000 during the first nine months of 1940.

On the other hand, United States exports to the United Kingdom during the first nine months of 1941 were valued at \$1,024,000,000 as compared with \$698,000,000 in 1940 and \$370,000,000 in the preceding year during which the European War broke out. Similarly, exports to Canada, which amounted to \$336,000,000 during January-September 1939, rose to \$511,000,000 and \$875,000,000, respectively, during the corresponding periods of 1940 and 1941. The effect of the war and the interest of the United States in its ultimate outcome is further reflected in the value of shipments to Egypt which amounted to only \$15,000,000 during the first nine months of 1940 but rose to \$122,000,000 during the same period a year later. Correspondingly, exports to South Africa rose from \$70,000,000 to \$125,000,000.

INFLUENCE OF THE ECONOMIC DEFENSE POLICY

The influence of the economic defense policy of the United States upon the country's trade during 1941 with the Latin American countries and with certain other areas such as British Malaya, Netherlands East Indies, and Australia was somewhat more clearly reflected in our import statistics than in our exports to those areas, although the two movements are not entirely unrelated. On the whole the countries in this group are important to the United States chiefly as suppliers of raw materials, many of a strategic or essential character. The necessity of accumulating stock piles of certain of these commodities, together with the importance of keeping supplies out of the hands of powers considered at the time as potential enemies, found expression in various agreements whereunder abnormally large purchases of certain commodities contributed to the total value of the year's imports.

United States imports from Latin American countries during the first nine months of 1941 aggregated \$767,800,000 as compared with \$489,500,000 in 1940. During the same respective periods imports from southern and southeastern Asia amounted to \$640,000,000 and \$501,000,000. Unusually heavy wool purchases from Australia during 1941 are reflected in a sharp gain in imports from Oceania which rose from \$22,100,000 in January-September 1940 to \$119,700,000 in the first nine months of 1941.

In view of the sharp rise in price of many commodities it should be noted that the percentage gain, on a quantity basis, of imports during 1941 over those of 1940 is less than the gain reflected by the value figures. The same tendency applies to exports but probably to a lesser degree. It should be noted, however, that these comparisons, whether based on value or on quantity, lose much of their usual significance in view of the wartime controls and other abnormal influences which have now become the dominant factors determining the main currents in the balance of international payments.

HEMISPHERE ECONOMIC DEFENSE STRATEGY

The United States policy of buying essential raw materials from Latin American countries and in aiding them to hold or dispose of surpluses, in some cases through credits extended by governmental agencies, forms part of a definite pattern of cooperative defense strategy. The British sea blockade was initially responsible for a shift by Latin American importers from European markets to suppliers in the United States. During the first nine months of 1941 Latin American imports from the United States amounted to \$662,000,000 as compared with \$580,000,000 in 1940. The rise in United States imports from the countries to the south provides additional dollar funds which in many countries have made possible higher purchases from the United States under conditions which have permitted the re-

moval or easing of exchange restrictions and import controls.

One of the difficulties inherent in this aspect of hemisphere defense is the attempt to adjust Latin American demands to the requirements of the domestic defense program. As American production facilities expand and as a coordinated hemisphere economic defense policy is definitely evolved, such difficulties will be lessened. Since our international transactions with Latin America involve dealings with 20 individual political entities, each with its own currency and customs systems, the process of balancing this country's international accounts has in some instances been supported by credits granted by United States governmental agencies. In other cases no capital transactions have been involved except possibly through the use or transfer of dollar balances created by net exports to the United States.

DECLINE IN TOURIST TRAVEL

On service account the United States is normally a net debtor. Before the war, Americans usually spent three or four times as much in foreign travel as residents of foreign countries spent in the United States. During 1940, the first full year of the war, United States tourists spent for travel abroad (including fares for travel on foreign-owned vessels) only \$223,000,000 as compared with \$516,000,000 in 1938, the last full year before the war. In view of the almost total cessation of travel to Europe and the appreciable decline in expenditures by United States residents for travel in Canada during 1941, it is probable that final estimates will show total expenditures for travel abroad considerably less than \$200,000,000.

REMITTANCE AND SHIPPING SERVICES

Since a substantial part of personal remittances by American residents to friends or relatives abroad normally go to such countries as Italy, Greece, Poland, and Germany, it is certain that actual transfers of such funds during 1941 were seriously limited by

the "frozen funds control" of the United States. In the case of shipping services the effect of wartime conditions upon the use to which available cargo space has been put, the shift in routes, and the effect of international agreements, have so confused the general situation for balance-of-payments purposes that it is impossible at this time to estimate respective receipts and payments with any degree of accuracy. Moreover, shipping services constitute an integral part of Lease-Lend operations and can not at this time be statistically dissociated from other operations.

INVESTMENT AND OTHER FACTORS

Since the United States normally receives from two to three times as much from its investments abroad as it pays to investors residing abroad, a substantial part of the net dollar payments made to foreigners for travel and shipping and as personal remittances may be said, in effect, to revert back to Americans when they repatriate the net earnings on their investments abroad. The liquidation during 1940 and 1941 of a substantial volume of high-yielding British-owned American investments and the sharp decline in net dollar payments received by foreigners from the United States for "invisibles" have each had the effect of reducing the foreign-owned dollar assets currently available for financing the large net flow of finished war materials and other commodities from this country to a world at war. Considered in connection with the decline in gold imports the significance of Lease-Lend and other measures designed to support the civilian and military forces of the world's democratic powers at war with a common enemy, is reflected throughout all the main classes of transactions in the country's export-import balance of 1941.

GOLD MOVEMENTS

Net gold imports into the United States in 1941 amounted to \$982,000,000 and consisted in substantial part of new world production, largely in

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the British Empire. Since gold held under earmark for foreign account increased during the year from \$1,808,000,000 to \$2,215,000,000, it is apparent that the net gain in United States gold stocks from foreign sources was considerably less than the actual imports. This comparatively small net inflow was in sharp contrast with the extraordinarily heavy annual net movements of gold to the United States since 1934. During the calendar year 1939, the net inflow amounted to \$3,040,000,000, while during the following year the inward movement added \$4,099,000,000 to the United States gold stocks.

The extraordinarily large inflow during 1940 resulted from a combination of several emergency factors: (1) the tremendous inrush of gold from the continent of Europe after the German invasion of the Low Countries and (2) the British needs for war equipment and supplies after the evacuation of Dunkerque. These needs, growing in part from the loss of equipment in France, were accentuated by the threat of invasion by the victorious German armies. The immobilization of gold still remaining in continental countries at the time of German occupation, the fall of France and the non-utilization of French gold held under earmark in the United States or held elsewhere, and the exhaustion of British gold reserves had by the end of 1940 greatly minimized the importance formerly held by gold as a factor in the balancing of the international accounts of the United States.

CAPITAL MOVEMENTS

The major factor in the reversal of international capital movements during 1941 was the net liquidation of British-owned, American securities which during the first nine months of 1941 amounted to more than \$220,000,000. In addition, a total of \$55,000,000 was realized by the sale of an American subsidiary of a British concern. Moreover, other British-owned securities were employed as collateral for loans granted by the Reconstruction Finance Corporation. The first

transaction, which involved the property of a single company, made available a net amount of \$25,000,000 in dollar funds. The major transaction, completed in July, involved the pledging of securities valued at \$450,000,000 and yielded an additional \$425,000,000 available for the purchase of goods and services in the United States.

Additional "capital exports" in the balance of payments originated in financial assistance given during 1941 through the Export-Import Bank. New commitments during the year amounted to \$112,900,000, although actual disbursements were much smaller. All these operations arose from arrangements made with Latin American countries. The actual effect upon the balance of payments during 1941 of financial aid given through the Treasury's Stabilization Fund was not of major importance and need not be discussed in detail.

FOREIGN ASSETS IN THE UNITED STATES

Estimated foreign dollar balances, investments, and other assets in the United States amounted at the end of 1940 to approximately \$9,695,000,000. In view of transactions during 1941, already referred to, these holdings have been reduced since that time. Cash balances and other short-term funds, which were reported at \$3,978,000,000 at the end of 1940, declined somewhat during the first nine months of 1941 but this reduction can not be viewed as an important factor in the year's aggregate capital transactions.

With the spread of the war, the "freezing" control has been extended to a number of countries which have relatively large holdings in the United States. Although European countries not under German occupation are permitted by license the conditional use of their dollar assets, it is not probable that transactions can assume any real importance before the end of the war. Most of the British-owned securities subject to easy liquidation or to ready mobilization have already been utilized by the British authorities. The wide geographic distribution of the

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foreign-owned dollar balances and the fact that a certain amount is required by each country as a "working balance" limit the potentialities of wide changes during the war in the utilization of existing foreign-owned balances. Moreover, the balances of countries whose dollar funds are "frozen" constitute an important element in the total item. For example, French balances aggregate more than \$450,000,000, while Dutch and Belgian deposits combined amount to almost \$300,000,000.

EXPORT LICENSING CONTROL

The export licensing system, established July 2, 1940, had as a primary purpose the granting of assistance to nations resisting aggression. The use of materials and equipment was to be consistent with the national interest. Except under license, the exportation of military equipment was prohibited if such equipment was essential to the national defense. In accordance with an announcement by the Under Secretary of State on July 17, 1941, parallel procedures were to be established for handling export licensing and priorities relating to exports to the American republics. On Sept. 17 the Office of Export Control was transferred to the Economic Defense Board. With the entrance of the United States into the war on Dec. 7, the system of export control became integrated with the wartime machinery of economic warfare.

FROZEN FUNDS CONTROL

With the extension of freezing control on June 14, 1941 to all countries of Continental Europe, including Germany and Italy, the emphasis was shifted from a defensive weapon intended primarily to protect the property of persons residing in invaded countries to a weapon of economic and financial warfare against the Axis. The order of June 14 was extended on July 26 to Japan when that country invaded French Indo-China.

The order of June 14 threatened to entail serious disadvantages to American exporters selling to Latin American countries, since the burden was

imposed upon them of determining the legal status of persons through whom they had long been accustomed to do business. In order to deal with this problem, the President on July 17 authorized the issuance of the Proclaimed List of Certain Blocked Nationals. This list, which is revised from time to time, contains the names of persons and firms believed to be unfriendly to the interests of the United States. By this procedure the freezing control is extended, in effect, to persons and firms that are to be treated as though they were nationals of the Axis Powers.

LEASE-LEND ACT

The task of Lease-Lend is to supply those who are resisting Axis aggression with the tools to make that resistance effective. Since the operations were just getting under way during 1941, the value of actual exports of Lease-Lend items up to the end of November was only \$595,000,000, merely a fraction of the total appropriations amounting to approximately \$13,000,000,000. Moreover, Lease-Lend aid extends beyond the merchandise items in the balance of payments. It includes the repair of hundreds of ships; also the shipways producing Lease-Lend ships. It includes the training of airplane pilots for Lease-Lend countries and various types of services related to the war effort. In his report of Dec. 12, 1941 on Lease-Lend operations, the President listed 32 countries which were at that time receiving aid under the provisions of the act of March 11, 1941.

CONCLUSION

With the entrance of the United States into the war, it is safe to assume that the export-import balance for 1941 will set the pattern of international transactions throughout the war period. As the "arsenal of democracy" the United States will supply to the democratic nations goods and services the value of which will have as their counterpart in the balance of payments the "capital value" of reported Lease-Lend transfers. Gold imports will necessarily be lim-

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ited, with new production constituting the principal source. The aggregate values involved and the respective directions of movement, although

indicated in general outline by the scope of war activities, are necessarily dependent upon industrial output and wartime strategy.

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WAR ENDS PERIOD OF FAR EAST TRADE DETERIORATION

The Japanese attacks on the American, British, and Dutch territories in the Pacific Ocean beginning Dec. 7, 1941, which converted the existing conflicts in Europe and in China into a world war, also broke the few remaining trade ties between the principal overseas countries and Japan and the Asiatic areas under its control.

Even before the outbreak of the war in the Pacific, however, the foreign trade of Japan and of most of China had shrunk to a fraction of its normal volume, and the main current of their overseas commerce had practically dried up. A progressive deterioration in Far Eastern trade relations with the outside world had been taking place since shortly after the beginning of "the China Incident," in the summer of 1937. The decline proceeded slowly for a time, but culminated during 1941 in a rapid series of final constrictions, self-imposed and external. The military events of December 1941 simply marked the formal close of the chapter.

PROGRESSIVE RESTRICTION BY ACTION OF JAPAN AND OTHER POWERS

Since October 1937, three months after its invasion of China, Japan had been subjecting its own foreign trade to a system of license restrictions. Certain foreign products were prohibited altogether. A long list of others could be imported only under

license, and a group of specified Japanese products were not to be exported without special permission. By successive expansions of these lists, and the tightening of its general exchange control, Japan had sought during the last few years increasingly to restrict the country's purchasing power for imported products to materials and equipment regarded essential to its military program and to certain of its basic industries. Many consumers' staples which were imported into Japan, or dependent upon imported materials, have been closely rationed for several years.

However, certain industrial materials which Japan wished particularly to acquire, for current use or for stock-piling, became increasingly difficult to obtain from abroad during the past year or so. This was due partly to the increased demand for the very same products for the enlarging defense programs of the British Empire and the United States, and partly to the gradual extension and tightening of the export control systems of the United States (later applied also to the Philippines), of the major British areas, of the Netherlands Indies, and of the various republics of Latin America. During the year also, Japan's principal remaining channel of trade with Europe was cut off, as will appear later.

JAPAN'S SELF-SUFFICIENT REGIONAL ECONOMIC BLOC

In the meanwhile, apparently in the expectation of a more limited participation in world trade during the period ahead, many pivotal Japanese industries were undergoing consolidation and extensive readjustments

* For a fuller account of this subject, see series of articles in *Foreign Commerce Weekly* of U. S. Department of Commerce, beginning with issue of Jan. 17, 1942.

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which were designed, among other things, to reduce their high dependence upon foreign countries as sources of their materials and as markets for their products. The conduct of foreign trade was gradually concentrated into a limited number of governmentally-controlled associations. The dominant objective was the adaptation of the Japanese economic structure to the government's military program, and to its project for establishing a more self-contained regional economic bloc, to operate under Japanese direction, and expected to comprise a large part of Eastern Asia. This goal was given the name of the "Greater East Asia Co-Prosperity Sphere."

JAPANESE CONTROL OF TRADE WITH OCCUPIED CHINA

The movement of goods into and out of Manchuria and north China has, for a number of years, been subject to a tightening system of license and exchange restrictions, operated by quasi-military Japanese authorities. Imports were held down to indispensables and, to conserve foreign exchange, were supplied so far as possible from within "the yen bloc," the term applied to the combined area of the Japanese Empire, Manchuria, and north China. Exports were strictly controlled, largely channeled to Japan, and their profits partly drawn off through arbitrary exchange rates and other official devices. The resulting hardships upon the population of the occupied or blockaded areas of China, in the form of extreme shortages of necessities and price inflation, have been matters of common report.

By discriminatory operation of the various measures of control, Western trading firms and enterprises were being progressively crowded out. The import and export trade of occupied China was increasingly diverted into the hands of Japanese firms or Japanese-sponsored organizations designated by the military authorities, who are reported to regard goods moving in foreign trade as a particularly suitable source of revenue for their purposes.

FOREIGN TRADE WITH UNOCCUPIED CHINA

Overseas trade with the unoccupied regions of China, which the Chungking authorities sought to foster, continued to be carried on in substantial volumes, both ways. The trade moved partly through the ports of Central and South China, although precariously, and increasingly through Rangoon and overland *via* the Burma Road, the principal entry route for Lease-Lend products from the United States, and the export channel for the metals and other "free Chinese" products bound overseas. The inland routes of trade with Russia and Siberia also continued to be used, but little is known regarding the volume of traffic moving over them.

JAPAN'S TRADE RELATIONS WITH EUROPE, RUSSIA, AND THE INDIES

The German invasion of Russia on June 22, 1941 closed the overland route for Japanese trade with Europe. The British naval blockade had made the ocean routes unsafe for over a year. It is reported that substantial quantities of tropical products and other Asiatic raw materials had been regularly procured by Japan and shipped to Germany and other European destinations over the Trans-Siberian Railroad, in return for German military equipment and other European manufactures moving eastward, for disposition by Japan.

The Russo-German conflict also cut down the possible volume of Japanese trade with Russia itself, despite the new Russo-Japanese commercial agreement concluded earlier that month, which contemplated an increased trade turnover between them in their distinctive products. Just before the outbreak of that conflict, Japan had given up as a failure its strenuous negotiations with the Netherlands Indies, in the course of which it had sought assurance of being supplied with exceptional quantities of various raw materials, part of which was quite obviously for reshipment to Germany.

The commercial agreement between

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Japan and French Indo-China, concluded in May 1941, when Japan had only limited foothold in that country, bears a close resemblance to the type of economic relationship set up by Germany with the various countries of continental Europe which came under its control, or had no outside alternative.

PROPOSED JAPANESE TRADE BALANCING AND FOREIGN FREEZING OF JAPANESE ASSETS

Early in July 1941, Japan apparently reversed her previous policy of seeking to promote exports to outside countries for the purpose of acquiring foreign exchange with which to pay for necessary imports. Restrictions upon the exportation of all classes of commodities were authorized, and the customs clearance of all shipments to other than yen-bloc destinations was suddenly suspended. This was declared to be preparatory to working out a revised foreign trade schedule, based upon equalizing the exports to individual non-yen-bloc countries with the imports obtainable from each such country.

Before the end of that month, however, the United States, the British Empire, and the Netherlands Indies ordered the freezing of all Japanese assets in their territories, as an expression of protest against the further Japanese encroachment upon French Indo-China. This drastic action practically put an end to the trade of Japan, and to a large extent also of occupied China, with this important group of countries. Taken together, they had constituted the source of about three-fourths of all Japanese imports from outside the yen bloc, and of an even greater proportion of the materials essential to Japanese military and industrial operations. This appears to be the first instance of thorough-going application of economic sanctions upon an aggressor country through concerted trade control measures on the part of its major suppliers.

During the months following these credit freezing orders, and until the outbreak of the war in the Pacific in

December, Japan was perforce confined in her trade relations mainly to the yen bloc. Despite the reported accumulations in Japan of substantial reserves of many foreign commodities, the cutting off of the accustomed inflow of various raw materials and other products for which the country depended upon overseas, was reported to be causing considerable industrial curtailments and consumers' hardships.

SHIFT IN EXPORT POLICY OF GREAT BRITAIN

While British seapower permitted the members of the British Empire to continue to carry on trade with practically all parts of the world other than the occupied and secluded countries of Europe and the adjacent African coast,—at least until the outbreak of the war with Japan in December,—the trade policy of Great Britain shifted during 1941 toward curtailment of volume and selectivity of markets in the matter of exports, and a radically changed program of import procurement, involving much greater dependence upon the United States as the source of her requirements.

The change in official policy amounted to a virtual suspension of the drive for increased exports enjoined upon British producers early in 1940. Large production for export markets was then declared as second in importance only to the production for war purposes. Empire markets would thus be kept supplied without drawing upon non-sterling exchange, and sales to other markets would build up the foreign exchange with which to pay for the increased volume of war materials that had to be obtained from abroad. However, the recognition soon grew that the production of non-essential civilian commodities for shipment to the sterling areas was as undesirable as supplying them to the home population. Joined with the increasing pressure upon available shipping space, this had led, even during 1940, to a selective policy in the official attitude of Great Britain toward exports.

The approval by the United States

Congress in March 1941 of the Lease-Lend Act, authorizing the President to supply necessary products to those countries whose defense he considered essential to our own, without requiring current compensation, brought about a fundamental change in the export as well as the import policy of Great Britain. The ability to call upon the huge resources and productive capacity of this country "on open account," removed much of the motive for maintaining a high volume of exports to the United States and other areas for the purpose of building up foreign exchange resources. In fact, it made possible the intensification of the British effort to devote to production all available materials, capacity, and manpower to war purposes, and was followed in September 1941 by an announced intention to restrict the country's export trade "to the irreducible minimum necessary to supply or obtain materials essential to the war effort."

A collateral objective has been the desire to avoid any unfair competition with United States exporters in supplying common markets with materials or products of the types restricted from the United States on the grounds of short supply, or with products similar to those being supplied to Great Britain under Lease-Lend. Approval of British exports to Empire areas is now understood to be largely dependent upon the degree of essentiality of the goods to the receiving country, and in the case of the remaining neutral markets, particularly of Latin America, upon the amount of essential foodstuffs or materials which those countries can furnish in return, and for which Great Britain can arrange shipping.

INFLUENCE OF LEASE-LEND PROGRAM ON BRITAIN'S IMPORT POLICY

It has been upon British import policy that the adoption of the Lease-Lend principle by the United States in 1941 has had the most marked influence, constituting as it does the boldest and most overshadowing development in the field of international

economic relations since the outbreak of the war. Within less than a year, an aggregate of about \$13,000,000,000 has been authorized for expenditure by the President for the benefit of countries regarded as eligible for such aid. Up to the end of November 1941, the total Lease-Lend aid rendered amounted to \$1,200,000,000, of which about \$600,000,000 represented the value of products actually exported. With the largest part of Lease-Lend funds still in the allocation and production stages, the Lease-Lend aid actually rendered had reached a monthly total of \$283,000,000 by November 1941, and steadily rising.

The allocations of Lease-Lend funds thus far have been principally for the account of Great Britain, and some measure of their relative magnitude is afforded by a comparison with the value of our normal exports. The Lease-Lend appropriations thus far voted amounted to three times the annual value of all merchandise exported from the United States to all countries during recent years, and to more than five times the combined exports from the United States to the entire British Empire, Soviet Union, China, and Netherlands Indies during the second war year, which included the heavy shipments made during that period against the cash purchases by the British and other foreign buying commissions. The combined imports into the United States from this group of countries during 1941 would offset the value of the total Lease-Lend aid authorized to the extent of only about 13 per cent.

With the waiver of the requirement for current payment and the legislative earmarking of substantial funds for the purpose, Great Britain, during recent months, has been calling for sizeable quantities of certain foodstuffs, industrial materials, and manufactured products of non-military character. The importation of many of these products into Great Britain had until recently been severely curtailed or prohibited from the United States under the British import restriction system, so long as the conservation of dollar exchange for war

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supplies was the prime consideration. The foodstuffs being procured for shipment to Great Britain under Lease-Lend, which constitute the greater part of the non-military supplies, consist largely of products which have not normally been exported to that country, or in anything like the quantities now called for. This has required the U. S. Department of Agriculture to set increased production goals for American farmers or processors of these products during the period ahead, goals which have in mind also provision for postwar foreign relief needs, and for a long-term program of improved nutrition for the American people.

While the various parts of the British Empire and certain allied countries are also being drawn upon heavily for the provisioning of Great Britain, the shipping shortage and the need for convoyed sailings are understood to have led to considerable concentration upon satisfying such British import requirements from United States and Canada, the short crossings allowing quick turn-around of the ships available.

SUPPORT OF BRITAIN'S PROGRAM BY DOMINIONS AND COLONIES

The various countries of the British Empire tightened their local measures of trade control during 1941 in general support of the program of Great Britain just sketched. There was a distinct intensification of the effort to curtail, in many of the areas, the civilian consumption of products at all dispensable, of whatever origin, so as to make available all possible funds and productive resources for purposes related to the war. In addition to a tightening of import restrictions, various Empire areas sought to discourage the purchase of certain classes of goods by their populations, through the imposition or increase of sales taxes up to sizeable amounts. The Union of South Africa was exceptional in not ordering a general system of import license control until September 1941. By the end of the year, however, it was the general rule in

British Empire areas for the importation of practically all products to be subject to license, and to an increasing extent the need of the particular imports must be proven before a license may be expected.

CANADIAN-AMERICAN ECONOMIC COORDINATION FOR DEFENSE

The movement between Canada and the United States of the specialized materials and equipment, which each is best able to supply, was considerably facilitated during the year, despite the tightening of the general export control systems of both governments. Joint committees were set up to work out the implementation of the Hyde Park statement of April 20, in which President Roosevelt and Prime Minister Mackenzie King jointly agreed upon a general program for the most prompt and effective utilization of the resources and productive facilities of the two countries, for the purpose both of common defense and of coordinating assistance "to Great Britain and the other democracies."

To this end, the Canadian Government extended the principles of its drawback law so as to waive the payment of duties and taxes, or to provide for their refund, upon imports of munitions and supplies for the fulfillment of war contracts placed by the Canadian Ministry of Munitions and Supply, or on behalf of the United Kingdom or any allied government. In connection with the general Canadian price control program inaugurated on Dec. 1, the Canadian Government announced that it would either reduce its import duties or pay a direct subsidy, if the price of foreign products whose continued importation it regarded as essential should rise above the price ceilings set for them in the Canadian market.

BRITISH BULK PURCHASE ARRANGEMENTS FOR EMPIRE PRODUCTS

The program initiated early in the war, whereby the British Government

undertook to purchase or to underwrite the entire exportable surplus, or large quantities, of a wide range of primary products of the dominions and colonies, was substantially continued during 1941. Outstanding among the developments in this field during the year were the identical co-operative arrangements entered into for dealing with the surplus problems of Australia and New Zealand for the period of the war. In addition to the undertakings on the part of the British Ministry of Food to purchase and pay for the produce that could be shipped, it was arranged that reserve stocks of storable foodstuffs were to be created up to agreed quantities. The financial burden of acquiring and holding these stocks is to be shared equally between the governments, and the payments are to be fixed with a view to keeping the industries operating efficiently while avoiding the creation of unmanageable surpluses.

TRADE ARRANGEMENTS WITH ALLIED AREAS

The privileges of trading freely within the Empire, as members of the sterling area, were by the end of 1941 extended by Great Britain to Egypt, Iraq, Belgian Congo, the Free French areas, and Iceland. The Netherlands Indies have been accorded that status by British India, Australia, and other eastern areas. Revised economic agreements were entered into with certain colonies of Free French Africa and with the Belgian Congo, whereby Great Britain undertook to purchase their principal crops and raw material outputs, and to furnish essential supplies for local consumption.

RELIEF FOR LATIN AMERICA IN THE EXPORT SURPLUS SITUATION

A year ago, the pressure of undisposible surpluses, because of the practical closing off of the European markets, after the fall of France in June 1940 and the extension of the British blockade to most of that continent, had stood out as the dominant

economic problem of most of Latin America. It was responsible for the tightening of import restrictions by many of these countries, and for stimulating the consideration of a wide range of measures affecting their trade and general economy.

During 1941, that situation was substantially relieved mainly through the sharply increased purchases by the United States. The expanding domestic industrial program led to greatly increased commercial purchases by United States firms of wool, copper, hides, and other Latin American staples. By special arrangements with certain Latin American countries, to be discussed later, agencies of the United States Government undertook to purchase large quantities, if not the entire output, of various non-ferrous metals and other strategic and critical materials, with four purposes in view: the needs of the defense program, for stock-piling, to preclude their reaching members of the Axis, and general relief for the economic position of the other American republics.

Under the inter-American coffee quota arrangement of October 1940, the United States, the principal consumer, afforded the 14 coffee-producing countries of the Western Hemisphere assured markets, somewhat enlarged in volume and at improved prices. At the end of the year, the United States announced the purchase of the entire Cuban sugar surplus of 1942, at slightly above prevailing prices. It is to be taken in the form of raw sugar, and of molasses for industrial alcohol, and the purchase is to be partly for British account.

The increased purchases of each other's products on the part of some of the Latin American countries themselves operated as an auxiliary measure of relief. This appears to have been the result of both the wartime difficulties of obtaining supplies from the usual sources, and of the newly-stimulated sentiment for closer hemispheric relations in many fields. Although the aggregate value of such inter-Latin American trade is still a relatively small part of the total, the

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recent steps in its expansion constitute a notable development.

RELAXATION OF LATIN AMERICAN IMPORT CONTROLS

The resulting improvement in their general foreign exchange position during 1941 enabled many of the Latin American governments to ease the official conditions of importing foreign goods. Thus, Argentina took several steps during the year, even before the conclusion of the reciprocal trade agreement with the United States in October, to furnish exchange for the importation of certain American products hitherto barred, to accord more favorable exchange rates in the payment for others, and generally to minimize the formalities. The Argentine system of prior exchange permits was abolished in July. Several other Latin American governments either lifted the restrictions on exchange permits for the importation of certain products, announced increased allotments for specific classes of imports from the United States, or were reported, in general, to be granting dollar exchange more freely. From quite a number of American Republics in which considerable delays in obtaining remittances for imports had been the common experience, even when no formal control of exchange was in operation, reports in 1941 told increasingly of shorter or no delays, at least on products in the categories regarded as essential.

During recent years exchange control has become the dominant mechanism for trade regulation in many of these countries, especially of South America, and changes in import duties have been less common or less determining of the course of trade. However, during 1941, Paraguay reduced its duties on a wide range of products in order to keep down retail prices of import staples, and Panama started on such a program. Chile placed the production as well as the trade in textiles under governmental control to check the mounting prices of clothing. Uruguay ordered the free admission of certain consumers' staples up to specified amounts.

THE PROBLEM OF LATIN AMERICAN ESSENTIAL IMPORT NEEDS

The movement toward liberalization of import controls, which the improved foreign exchange position made possible during the year for many countries of Latin America, was partly offset by the other factors. These prevented the easement being fully utilized and reflected in a generally increased volume of importations, particularly from the United Kingdom and the United States, the two principal accessible sources. The shift in the export policy of the United Kingdom is pointed out in the earlier discussion of the British Empire.

The orders from Latin America directed to the United States for many manufactured products, as well as industrial materials and equipment, grew in volume as the year proceeded, both to replace supplies previously obtained elsewhere and to allow carrying through new industrial and construction projects stimulated by the war situation. However, their aggregate volume soon came to exceed the ability of United States producers to supply in full, owing to the mounting needs of these very classes of products for the country's own defense program and for shipment to Great Britain and other nations resisting aggression. Concern grew in various of the southern republics that important new projects, essential national industries, and, in some cases, even public utilities might be slowed down or suspended because of the difficulties of obtaining necessary imported materials, equipment, or replacement parts.

In pursuance of its policy "of maintaining the economic stability of the Western Hemisphere," the United States Government early declared its intention "to facilitate insofar as is feasible the exportation to the other American countries of at least their essential import requirements." At the same time, it seemed important to insure that the products so exported reached their desired destination and no other, and that the strategic materials and sources of the hemisphere were utilized in the con-

tinental defense. It was, therefore, urged by the United States that these objectives of interest to all the American republics might best be realized by the creation of an inter-American system of export control, combining restrictions upon shipments outside the western hemisphere with the maximum of free commerce within the hemisphere consistent with defense requirements. This situation led to a three-fold program of interlocking trade control measures and arrangements between the countries of Latin America and the United States.

INTERLOCKING HEMISPHERIC TRADE CONTROLS

While varying in precise scope and form, as each country proceeded to take action in accordance with its own constitutional procedure, by the fall of 1941 all of the 20 republics of Latin America had adopted systems for restricting the reexportation of specified lists of materials and products essential to defense, or of all products subject to control in the country of their origin, and usually also of the exportation of similar products of domestic origin. In the meantime, the United States had gradually extended its own system of export license control, initiated in July 1940, until it included practically all commodities.

In recognition of the parallel measures of control on the part of the other American republics, the United States enlarged the list of controlled products that could be freely exported to them under "general license," which required no prior individual application or loss of time.* In the case of products for which the increasing demands of the United States defense program and Lease-Lend aid threatened inadequate supplies for civilian needs, organizations were established in Washington to give special consideration to the more important requirements of the Latin American countries, so as to secure for them, as far as possible, the necessary clearance on priorities as well as the export licenses.

* After the United States found itself at war in December 1941, the scope of some of these "general licenses" had to be curtailed.

As distinct stringencies developed toward the end of 1941 for certain products in high demand, United States authorities recognized the need, in certain cases, for going beyond permission to export under the general licensing system, or even priority ratings to suppliers, by working out plans for assuring definite deliveries of specific amounts of urgently needed industrial materials to the other American republics. Tin plate was the subject of the first of this series of allocations; 218,000 metric tons were set aside for shipment to Latin America during the year beginning Dec. 15, 1941. Serious shortage had developed in the southern countries, particularly for the canning of farm products.

AMERICAN PURCHASE AGREEMENTS FOR STRATEGIC PRODUCTS

In urging that an inter-American system of export control be established over strategic materials, and others produced in the American republics that are important in the national and continental defense, the United States Government declared that its appropriate agencies "stand ready to give consideration to purchasing supplies of such commodities as a regular part of its program for building up its own defense reserves and supplies." A beginning in this direction was made during 1940 in the agreement with Bolivia, guaranteeing that the United States would purchase specific quantities of certain minerals, notably tin, for which refining facilities were being built in the United States. During 1941, the negotiations for three broad agreements of this character were concluded with Brazil, Mexico, and Peru; and discussions of similar arrangements with Argentina, Chile, and other Latin American governments were reported active at the close of the year.

Taken together, this series of interesting trade control measures worked out by the American republics during 1941 constituted an encouraging example of the possibilities of cooperative action on the part of independent

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countries for reciprocal economic support. In the voluntary action of the respective governments, and in the planning of each measure with a view to the benefit of the individual participating countries as well as in the light of the broad economic strategy for the group, this inter-American program stands out in striking contrast to the trade arrangements entered into during the same period by the countries on the continent of Europe under the "leadership" of Germany.

SUPPORT OF SURPLUSES BY VARIOUS AMERICAN COUNTRIES

As earlier indicated, the enlarged purchases by the United States of the surpluses of the various Latin American countries did not extend to all surplus products. They could hardly apply to cereals, cotton, and other commodities of which the United States was itself a surplus producer. The purchases of some of these products by the United Kingdom and, for a time by Japan, tapered off during the year, although for different reasons. However, a number of the governments of Latin America adopted measures for domestic support of certain undisposable surpluses. This program was observed also during the preceding year, but was facilitated during 1941 by the more ample funds at the disposal of the respective governments from the enlarged sales of other products to the United States.

Thus, the Argentine Government bought up the bulk of the current crops of certain grains at guaranteed minimum prices. The requirements enforced by Argentina the preceding year, that prospective importers of fuel must undertake to purchase specified quantities of corn for burning, was continued. Brazil set fixed prices for wheat flour, and continued its requirement that millers mix Brazilian mandioca in grinding the wheat. That government also granted loans to cotton growers at fixed minimums. The revenue derived partly from the coffee tax imposed in connection with the inter-American coffee agreement enabled the Government of Colombia to buy up, and destroy or store, sur-

pluses remaining after filling the United States quota and small sales elsewhere. Paraguay offered to buy all surplus sugar at a fixed minimum price, and Uruguay proposed to do the same for wheat.

LATIN-AMERICAN DIVERSIFICATION AND INDUSTRIALIZATION

The stimulus given to the expansion of old industries or the establishment of new lines of production has been widely noted as one of the outstanding reactions in many of the Latin American countries to the war situation. Governments have been eager to assist efforts to diversify the country's economy, and especially to expand manufacturing, in small as well as major lines. During 1941, further measures were taken by several of these governments to foster this movement.

These measures have included the granting of duty and tax exemptions on industrial equipment and materials from abroad, or making exchange readily available for their importation, or assuring protective duties on the finished products. In several of the larger republics, the expansion in manufacturing in a growing number of lines, notably the processing of domestic materials, appeared to count upon the nearby markets as well as the needs of the domestic population. The increasing prominence of cotton textiles among the exports of Brazil and Mexico to other American countries well illustrates this tendency. The Government of Argentina sought authority to pay drawback of duties on foreign materials and products embodied in Argentine manufactures exported to other American areas.

LONG-TERM MOVES FOR CLOSER INTER-AMERICAN ECONOMIC RELATIONS

In addition to the increased current trade between the republics of Latin America and the United States, and between themselves, stimulated primarily by the wartime needs and developments, the impetus given during the preceding year to the consideration of various long-term arrangements for closer inter-American eco-

conomic relations gained increased momentum during 1941.

Outstanding was the trade agreement between Argentina and the United States, announced in October and brought into operation in November. This represented the successful conclusion of exceptionally difficult negotiations that had been carried on intermittently for some years. Basically, the agreement resembles those previously concluded between other Latin American countries and the United States, in providing for reciprocal concessions and assurances regarding duties, quotas, and other forms of import control, and on a non-discriminatory basis. Additionally, it carries a number of special provisions and reservations, some of which may not continue long after the close of the war. However, many observers regard the Argentine-United States agreement as less significant for the direct commercial results to be expected during the period immediately ahead—since other forces are currently more determining of the course of trade—than for the fact that these two leading American governments have been able to work out a basis for cooperative trade relations along liberal lines, and have laid a sound foundation for their post-war commerce.

The second supplementary trade agreement between Cuba and the United States, concluded in December 1941, broadened and deepened the tariff and other concessions in favor of each other's products provided for in the original agreement of 1934. Preliminary discussions looking to reciprocal trade agreements with the United States were carried on during the year by a number of other Latin American governments, notably Uruguay, Peru, and Mexico. The facilities of the Export-Import Bank of the United States, both to assist current trade transactions with the other Latin American republics and for longer-term developmental purposes, continued to be made available for selected projects, and thus contributed their influence upon the course of inter-American trade.

Among the Latin American coun-

tries themselves, the year witnessed exceptional activity in the way of inter-governmental negotiations and visits of official missions, to discuss measures for the stimulation of increased trade between them and closer economic relations in other respects. In many cases, appreciable progress was reported toward the planning or actual negotiation of commercial treaties for the reduction of trade barriers, of financial or credit agreements, or of arrangements for improved transportation and transit facilities.

PROGRESSIVE SECLUSION OF THE EUROPEAN CONTINENT

Since almost all the countries of continental Europe are now either engaged in war or are under control of the Axis, and are moreover rendered practically inaccessible to overseas commerce by the British blockade, the specific changes in their trade control measures or arrangements during 1941 are of commercial interest primarily to the peoples in other reachable areas of Europe. For the overseas countries, what has been happening recently inside of Europe is of significance mainly as a general exemplification of the pattern of the international trading structure and economic arrangements which Germany would set up, if in definite control of any large part of that continent.

The extension of the military control of the Axis during the year, through the Balkans and to the Aegean Sea, not only cut off southeastern Europe from outside trade but made the eastern Mediterranean hazardous for merchant shipping. The entrance of Russia and of Finland into the general conflict closed off the Trans-Siberian Railroad, for some time the principal channel of traffic between Europe and the outside world, and also the thinner line through the Finnish port of Petsamo. The only remaining "neutral" countries at all open to overseas trade are Sweden, Switzerland, Spain, Portugal, and Turkey. Outside trade with the first four is now narrowly limited by

meager shipping facilities, even when no objection is interposed by either Great Britain or Germany, and such deliveries to Turkey can now be made only with difficulty or over circuitous routes.

EXTERNAL RESTRICTIONS ON TRADE WITH THE AXIS

For the greater part of 1941, restrictions upon supplies reaching Germany and Italy or areas under their occupation or control were effected by the continued maintenance of the British naval blockade, operated in conjunction with the navicert system. The latter limited to quarterly quotas the shipment from the United States and certain other countries of various classes of supplies to neutrals, and called for advance verification of ultimate destination. These measures supplemented the increasingly severe export license systems operated by Great Britain itself and by the various outlying countries of the British Empire. They found reinforcement in the expanding systems of control upon exports of essential products developed since 1940 by the United States and the other American republics.

Since the British blockade and navicert system could not so well be extended to the areas on the Pacific Ocean, a sizeable flow of supplies to European members of the Axis was understood to have continued from that direction up to the summer of 1941. The German invasion of Russia in June not only put an end to such supplies as Russia itself had been delivering to the rest of Europe, but also closed off the Trans-Siberian railroad, for a time the principal channel for non-European trade with Germany and the German-occupied areas.

AXIS COMMERCIAL INTEGRATION

The year witnessed few further steps in the formal process of annexation or incorporation of new territories into the customs areas of the Axis powers, as had taken place during 1939 and 1940 with regard to Austria, Albania, parts of Czecho Slovakia and Poland, certain districts of Belgium, Luxem-

burg, and Alsace and Lorraine. Aside from the setting up of the Croatian part of Yugoslavia as a separate commercial entity, the announced developments of this character during 1941 were mostly in the nature of adjustments in basic changes earlier initiated. The areas affected were The Netherlands, Bohemia-Moravia, and Alsace.

TRADE RELATIONS BETWEEN GERMANY AND THE OCCUPIED COUNTRIES

Aside from the countries or provinces incorporated into one customs area with Germany, or Italy (in the case of Albania), it has usually been represented that the European countries occupied by the Axis Powers have been permitted to maintain their former customs frontiers and their own fiscal system and trade control arrangements. In actual operation, however, it appears that the foreign trade of the occupied areas is being increasingly re-oriented toward Germany, both as market and as source of supply, and that their commercial transactions with all outside areas are subject to the detailed directions of the occupying authorities.

German military dominance and the fact that inter-European business is now conducted almost entirely on a compensation or clearing account basis, without use of foreign exchange, has facilitated the process of drawing off for German use the domestic products of the other countries and of the stocks of imported goods on hand. While taking the form of normal purchases for export, and often at apparently good prices, these transactions are usually balanced off only in part by the shipment of such goods as Germany finds it possible or convenient to supply.

Even such meager reports as came out of Europe during 1941, with the forced successive withdrawal of most American official and press representatives, tell of the mounting credit balances at the Reichsbank being built up by most of the continental countries. These credits apparently represent the formal record, so far as rec-

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ord is kept, of the uncompensated and largely involuntary shipments of their goods to Germany. In the absence of published statistics of exports and imports, the unofficial reports of acute shortages in various European areas, even of products of which the country is itself normally a surplus producer, afford practical confirmation of what has been transpiring. The resort to bread cards in Hungary, to breadless days in Rumania, to rationing of dairy products in Switzerland, and the shortage of fish in Norwegian cities, are cases in point.

An extreme instance of the arbitrary exercise of German authority over the economic life of an occupied area through trade control measures appeared in September, 1941, when reports were current that the population of Norway was not "collaborating" as desired. According to the Swedish press, commercial firms in Norway were advised that imports from Germany would be stopped, that machinery already ordered would not be delivered, and that licenses would be granted only in exceptional cases. This occurred at about the same time that all available metals in the country were being diverted to the expanding Norwegian arms industry, working exclusively for German account, and when all wool blankets in Norway were requisitioned for the German armed forces.

CHARACTER OF TRADE AGREEMENTS BETWEEN EUROPEAN COUNTRIES

Since the middle of 1940, the various secluded countries of Europe have been very active in the negotiation and re-negotiation of compensation agreements with other reachable countries on the Continent, in the effort to develop alternative sources for essential products now unobtainable from overseas. As earlier intimated, however, the trade arrangements of these European countries with Germany took precedence over all others. Announcements were made during the year of the conclusion by Germany of revised trade agreements with Italy, Denmark, Bulgaria, and a few others,

in addition to the neutrals earlier referred to. With most of the occupied countries of Europe, however, no such revisions were reported during 1941. This has raised the supposition that the formalities of negotiating with the nominal governments of certain countries under its control are coming to be dispensed with by Germany, when the periodical alterations in the schedules of reciprocal deliveries need to be worked out.

During the latter months of 1940, close German supervision was noted of the trade arrangements that were worked out between various pairs of European countries, whenever one of the occupied countries was involved. During 1941, several such trade agreements were reported to have been negotiated where German officials acted for the governments of certain occupied countries.

CLEARING ARRANGEMENTS THROUGH BERLIN AND ADJUSTMENT OF BALANCES

There was also carried forward during 1941 the system developed during the preceding year whereby payments for intra-European trade, not only among the occupied countries but also between them and a number of the continental countries then still independent, were required by Germany to be made through accounts set up at the German Clearing Office in Berlin. Since the value of the merchandise delivered from one country to another during a given period seldom corresponded exactly to the value of the products obtained from that country, the unequalized balances in the clearing accounts at Berlin soon called for some multilateral adjustments. These adjustments appear to be arranged in accordance with the discretion of the German economic authorities.

In some cases, the clearing accounts between a number of countries have been definitely merged. Thus, the new German-Swiss clearing agreement of 1941 was reported as expanded to cover Alsace, Lorraine, and Luxembourg as well as Belgium, The Netherlands, and Norway. After the Balkans

LIFE INSURANCE

were overrun, it was officially announced that payments on new commitments between Rumania and Greece, and between Rumania and Serbia, would be cleared through the German-Rumanian clearing account in Berlin.

The trade accounts of Italy with the various occupied European countries are also now cleared through Berlin. The revised trade agreement of February 1941 between Germany and Italy provided that, for the duration of the war, there was to be no limitation on exports from either country of materials of military importance, regardless of the state of the trade balance or the clearing account.

ADVANCE MOVES TOWARD PROPOSED "NEW EUROPEAN ORDER"

These steps to develop a collective clearing system for the trade of the European Continent, centering at

Berlin, form an essential part of the much-discussed German plan for the post-war organization of Europe. As repeatedly indicated by official German spokesmen, this plan envisages the European Continent as an integrated economic unit operating under the leadership and direction of Germany. The principal industries in the various countries are to be tied in with the corresponding industries of the Reich, and each country is to adapt itself to the production of such agricultural, mineral, and manufactured products as are called for by the economic interests of "Greater Germany." The present political helplessness of most of the other European countries, and their practical seclusion from the alternative of trade with overseas countries, are apparently allowing the German economic and technical staffs to make some headway during the war in the direction of the proposed "New European Order."

LIFE INSURANCE

BY WALTER KLEM

ASSOCIATE ACTUARY, MUTUAL LIFE INSURANCE COMPANY

GENERAL

All indications point to a 1941 record of substantially increased volume of life insurance. Estimates are that the amount of new insurance issued will be, roughly, 10% greater than for 1940, and that the amount of insurance in force at the end of 1941 will reflect the largest gain since 1929. (Estimates for 11 months only are available at the close of the year.)

The two most important factors which operated to produce significant changes during the year were the continuance of the problems brought about by the reducing yield on investments, and the intensification of the country's defense activities as events led up to the declarations of war in December.

Traceable to the investment situation were announcements by several companies, including the two largest

companies, of general increases in the premium rates for new life insurance policies. These premium changes will carry with them modifications—usually increases—in the amounts of non-forfeiture values included in the new policies. The general question of the relation between the underlying basis for premium rates and the amounts of non-forfeiture values received considerable attention and fresh examination as a result of the hearings and report of the Special Committee appointed by the National Association of Insurance Commissioners.

While the companies were faced during the entire year with the problem of dealing with war hazards, the practices of the companies varied considerably, and it was not until war was declared that some semblance of uniform practice in excluding war

X. BUSINESS AND FINANCE

risks from new coverage appeared likely. The war declarations also gave much greater significance to the 1940 Federal laws regarding insurance on the lives of members of the armed forces, and to the amendments of 1941.

Other special features of the year were the filing of the Final Report and Recommendations of the Temporary National Economic Committee, and the establishing, by act of the New York State Legislature, of The Life Insurance Guaranty Fund Corporation.

NEW BUSINESS

The results for the first eleven months of 1941 indicate that for the entire year the total amount of new business issued may be as much as 10% greater than the new business for 1940, which was about 3% greater than for 1939. Undoubtedly, part of the substantial increase is due to the

increased payroll of wage earners throughout the nation. Part of the increase is also probably due to the incentive furnished to prospective purchasers by announcements of increased premium rates and of changes to less liberal policy provisions, particularly in the matter of war clauses.

The greatest relative increase was in the amount of group insurance which is especially sensitive to general business conditions. While, for group insurance, a large part of the effect shows in the increase in the amount of insurance under contracts already in force rather than in the new business figures, the amount of entirely new contracts increased substantially. New issues of ordinary insurance showed a decidedly upward trend, especially in the latter months of the year, while the amount of new issues of industrial insurance showed about the same rate of increase over 1940 issues as 1940 over 1939.

NEW INSURANCE

(Association of Life Insurance Presidents)
(39 Companies Having 81% of Insurance in Force in All
U. S. Companies on Dec. 31, 1940)
(Dollars in Millions. First 11 Months of Each Year)

	1939	1940	Per Cent Increase	1941	Per Cent Increase
Ordinary Insurance.....	\$4,593	\$4,606	.3%	\$4,936	7.2%
Industrial Insurance.....	1,359	1,440	5.9%	1,524	5.9%
Group Insurance.....	698	571	-18.2%	730	27.8%
Total Insurance.....	\$6,650	\$6,617	-.5%	\$7,190	8.7%

NOTE: This table is only for the purpose of showing the tendency, so far as it is known for 1941. It corresponds only roughly with results for all insurance in all companies in previous completed years. The total insurance written in December, 1941 will probably be far in excess of that for any other month of the year.

INSURANCE IN FORCE

The effect of the substantial increase in amount of new insurance issued, coupled with a probable decrease in amount of insurance terminated in the year by surrender and lapse, is expected to increase the amount of insurance in force at the end of 1941 to approximately \$124,000,000,000 which is more than 5% greater than the amount in force one year earlier.

INVESTMENTS

The life insurance companies continue to face the vital problem of finding suitable investments for the funds entrusted to them. To obtain the desired degree of security, the companies have in recent years been compelled to make many large investments at lower interest rates than the rate assumed in the computations of premiums and reserves. As a consequence, the substantial interest

LIFE INSURANCE

NEW ISSUES—TERMINATIONS—INSURANCE IN FORCE

(All United States Companies)
(*Spectator Insurance Year Book*)
(Dollars in Millions)

	1940	1939	1938	1937	1936	1935
ORDINARY BUSINESS						
New Issues.....	\$ 7,506	\$ 7,260	\$ 7,506	\$ 8,151	\$ 8,073	\$ 8,113
Terminations:						
Death.....	743	718	719	708	707	675
Maturity.....	190	184	134	124	126	117
Surrender.....	1,502	1,620	1,689	1,511	1,740	2,348
Lapse.....	1,870	2,034	2,524	2,248	2,306	2,746
Other.....	1,006	1,101	1,125	1,068	1,227	1,540
Total.....	5,311	5,657	6,191	5,659	6,106	7,426
Insurance in Force.....	81,069	78,814	77,265	76,071	73,737	71,963
INDUSTRIAL BUSINESS						
New Issues.....	\$ 3,718	\$ 3,677	\$ 4,423	\$ 4,784	\$ 4,854	\$ 4,722
Terminations:						
Death.....	163	160	159	168	160	154
Maturity.....	83	55	43	31	28	29
Surrender.....	1,085	1,038	1,055	807	815	944
Lapse.....	1,730	1,767	2,181	2,137	2,225	2,534
Other.....	432	529	650	481	461	425
Total.....	3,493	3,549	4,088	3,624	3,689	4,086
Insurance in Force.....	21,344	21,140	20,986	20,591	19,464	18,297
GROUP BUSINESS						
New Issues.....	\$ 1,668	\$ 1,579	\$ 698	\$ 1,861	\$ 1,408	\$ 1,303
Terminations:						
Death.....	104	94	90	92	83	77
Maturity.....	28	0	0	0	0	0
Surrender.....	0	0	0	1	1	1
Lapse.....	73	82	113	127	153	126
Other.....	112	182	610	190	175	237
Total.....	317	358	813	410	412	441
Insurance in Force.....	15,381	14,023	12,803	12,910	11,466	10,470
ALL LINES OF BUSINESS						
No. of Companies	305	306	306	308	315	340
New Issues.....	\$ 12,892	\$ 12,516	\$ 12,627	\$ 14,796	\$ 14,335	\$ 14,138
Terminations:						
Death.....	1,010	972	968	968	950	906
Maturity.....	301	239	177	155	154	146
Surrender.....	2,587	2,658	2,744	2,319	2,556	3,293
Lapse.....	3,673	3,883	4,818	4,512	4,684	5,406
Other.....	1,550	1,812	2,385	1,739	1,863	2,202
Total.....	9,121	9,564	11,092	9,693	10,207	11,953
Insurance in Force.....	117,794	113,977	111,054	109,572	104,667	100,730

margins, which existed ten years ago and which formed an important element in surplus earnings available for dividends, have been gradually reduced. While very substantial margins continue to exist because of conservative assumptions as to mortality and because of the loading in the premiums, the necessity for taking action to offset the reduction in investment earnings has increased as the hope for a reversal in the trend

of the interest rate has diminished.

The net investment earnings of 49 United States legal reserve life insurance companies (representing 92% of the total admitted assets of all such United States companies) dropped from a rate of 5.03% in 1930 to 3.44% in 1940. This decline may be attributed to the degree of control over money rates exercised by the Federal Government, to the great influx of capital which sought

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INCOME—DISBURSEMENTS

(All United States Companies)
(*Spectator Insurance Year Book*)
(Dollars in Millions)

	1940	1939	1938	1937	1936	1935
Total Premium Income.....	\$3,944	\$3,825	\$3,800	\$3,762	\$3,683	\$3,692
Investment Income.....	1,231	1,201	1,156	1,132	1,081	1,013
Other Income.....	483	427	401	363	416	367
Total Income	5,658	5,453	5,357	5,257	5,180	5,072
Death Claims Paid	977	943	934	937	919	877
Matured Endowments	275	242	176	155	154	145
Paid to Annuityants	142	134	123	110	95	76
Surrender Values Paid	689	732	771	669	713	883
Dividends to Policyholders	456	456	447	436	418	424
Disability and Double Indemnity...	142	135	127	130	130	130
Total Paid Policyholders ...	2,681	2,642	2,578	2,437	2,429	2,535
Paid on Supplementary Contracts	213	184	176	167	132	120
Insurance, taxes, licenses, etc.....	135	135	131	127	117	105
Other Disbursements.....	885	866	859	879	840	833
Total Disbursements	3,914	3,827	3,744	3,610	3,518	3,593

refuge in the United States because of disturbed conditions abroad, and to the intense competition for the reduced supply of high-grade securities. The indications are that the year 1941 will show a further reduction.

An estimate of the admitted assets for the end of 1941 indicates an increase for the year of approximately \$1,750,000,000 to approximately \$32,500,000,000. Increased new business, good persistency rates in established business, and the increasing tendency to leave policy proceeds with the companies under optional modes of settlement are factors operating to produce the largest estimated increase in assets in some years. The year-end statements will show largest increases in the investments in United States Government bonds, public utility bonds, and outstanding mortgage loans. Real estate holdings and outstanding policy loans will be reduced.

The difficulty of finding adequate outlets for new investments has revived the question of making common stock investments legal for life insurance companies. While limited investment in preferred stocks is now generally permitted, the laws of most states prohibit any common stock in-

vestment. An exploratory hearing, held before a New York State legislative committee, developed current viewpoints, including rather strong opposition on the part of representatives of some of the life companies.

In an effort to meet the conditions imposed by the current low level of investment yield, various measures were taken by some of the companies, including increases in premium rates for life insurance and annuities, discontinuance of various forms of contracts involving heavy investment features, introduction of new policies involving less investment and more pure insurance element, reductions in the rate of interest guaranteed under optional forms of settlement in new policies, and further reductions in the limits of amount acceptable under single premium forms of contract.

DIVIDENDS

The scales of dividends payable to policyholders in 1942 will be generally the same or slightly lower than for dividends payable in 1941. Increases in dividend scales will probably be the exception.

PREMIUM RATES AND NON-FORFEITURE VALUES

Changes in the premium rates for

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non-participating contracts have been made frequently in recent years and are not unusual. On the other hand, mutual life insurance companies issuing contracts which participate in surplus earnings may retain the same schedule of premium rates for 30 to 40 years without change so long as the margins are considered sufficient. For many years the assumption of a 3% interest rate was deemed conservative, but the downward trend of the net yield on outstanding investments and the lack of evidence of any likely material improvement in the near future started a movement, which is likely to become general, to higher gross premium rates in order that larger margins may be present in the new business written.

Due to the fact that the rate of 3% had become crystallized in numerous statutes as the minimum rate permissible in reserve calculations, amendatory legislation was necessary in many states before it was practicable to change premium rates. By the end of 1941, the way had been cleared for the adoption of a rate at least as low as 2½%.

Toward the close of the year, three of the four largest companies, all operating on the mutual plan, announced their intention of revising all premium rates for new life insurance policies. In the case of two of the companies, the new premium rates will be based on 2½% interest, and in all three cases the companies are adopting a modern table of mortality in place of the American Experience Table previously used. The assumption of lighter mortality off-

sets to some extent the increase which would otherwise result from the change in interest basis alone, but the net result is an average increase in premiums of about 8% for one company and 10% for another, with the largest increases for the policies involving the heaviest investment element.

The adoption of higher gross premiums by mutual life insurance companies does not necessarily mean a corresponding increase in the policyholder's net cost of insurance. To the extent that the larger margins included in the gross premiums do not prove necessary, a larger amount of surplus will become available for dividend distribution. In the case of non-participating contracts, changes in the premium rates—several of which were made in 1941—mean a higher cost to the policyholders.

Somewhat higher reserves will be held in the future for the new insurance issued at the increased premium rates, and the individual policies will, in general, provide larger non-forfeiture benefits on default in payment of premiums. The whole question of equity in non-forfeiture benefits, as related to premium rates and reserve liabilities, was studied at considerable length by a special committee appointed by the National Association of Insurance Commissioners. The committee's report, which proposed new legislation in accordance with recommended model bills, received the careful consideration of a committee of Insurance Commissioners previously appointed to study the report, and also of a Company

ASSETS—LIABILITIES—SURPLUS

(All United States Companies)
(*Spectator Insurance Year Book*)
(Dollars in Millions)

	1940	1939	1938	1937	1936	1935
Assets	\$30,802	\$29,243	\$27,755	\$26,249	\$24,874	\$23,216
Liabilities	28,557	27,091	25,706	24,304	22,865	21,448
Surplus*	2,245	2,152	2,049	1,945	2,009	1,768

* Includes amount set apart for dividends to policyholders during following year and special, voluntary, contingency, etc., reserves.

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committee. The latter committee, in a statement to the Commissioners, agreed with the major fundamental principles enunciated in the report but recommended modifications with respect to the proposed standard laws. The Commissioners, at their meeting in December, deferred final action on the report until 1942.

WAR CLAUSES

The vast majority of the policies in force at the outset of the war in the fall of 1939 contained no exclusion of war hazards, except as to provisions for disability and double indemnity benefits. These policies have not been affected by the introduction of limitations in the risks assumed under new policies.

With the outbreak of war in Europe, the companies started to include in new policies provisions designed to protect the existing policyholders from the extraordinary mortality to be expected from modern warfare. Their use, however, was usually restricted to those cases in which there appeared to be a likelihood of immediate hazard, such as aliens, members of armed forces, and travelers to foreign countries. This practice was followed throughout 1940 and 1941 until the United States became involved in open hostilities, but, as the international situation became more strained, the companies made increasing use of these clauses. In addition, more use was made of provisions excluding the risk of aviation deaths, except death as a result of riding as a passenger on commercial airlines.

A great deal of variance existed among the provisions used by the companies. This was due in part to natural differences of opinion as to the amount of extra risk involved. Some diversity was also due to the conflicting laws and rulings which had to be followed in the various states. Legislative changes during the year, together with rulings by two Insurance Commissioners following our country's declaration of war, found most companies in a position to make general use of war and aviation

clauses. Most of the largest companies decided at once to incorporate such provisions in all new policies regardless of age and sex. The restrictive provisions will be of no practical effect to the great majority of those who are not subject to military service, but the universal inclusion of these provisions in new policies is simple, efficient, and probably fairer than differentiating among the applicants for insurance.

Although there are many variations, a typical war clause in use at the close of the year excludes the risk of death occurring at any time as a result of military or naval service of a country at war, and death occurring within two years after the policy is issued as a result of an act of war suffered while outside of the United States and Canada. In many cases there is also an exclusion of aviation deaths except for those resulting from passenger travel on commercial airlines. Provision is generally made that, if death occurs as a result of a risk not assumed, the company will return the premiums paid under the policy or, where larger, the policy reserve.

FEDERAL LEGISLATION

The declaration of war invested the National Service Life Insurance Act of 1940 with much greater importance. As enacted, this law provided that members of the armed forces could apply for five-year term insurance up to \$10,000 with a privilege of conversion to a permanent plan of insurance, all at net premium rates. An amendatory act of Congress, adopted after war was declared, provided that any person in active service who died before the end of 120 days after the enactment of the amendatory act or prior thereto will be considered to have applied for and to have been granted insurance of at least \$5,000. Similar provision was also made for benefits in event of total disability suffered in the line of duty. These automatic benefits were extended by Congress because of the suddenness with which actual warfare occurred and with the realization that many in

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the service who desired protection under war conditions had not had time to comply with the requirements.

Increased interest and importance also attached to the Soldiers' and Sailors' Civil Relief Act of 1940 which provides, among other things, that, during the period of military and naval service of an insured applying for the benefits of the Act and during the first year following termination of such service, any existing insurance up to a total of \$5,000 shall not be lapsed or forfeited by an insurance company for non-payment of premium.

T. N. E. C. REPORT

The Final Report and Recommendations of the Temporary National Economic Committee were presented to Congress in March, 1941. The study of life insurance, which had been assigned to the Securities and Exchange Commission, was very extensive. Oral testimony by company officials and others, and questionnaires completed by the companies, furnished a wealth of information about the conduct of the life insurance business. Rumors and counter-rumors that the T.N.E.C. would recommend Federal regulation were put at rest by the final recommendations which very definitely aimed at strengthening the present state regulation of the business.

In addition to recommending to the several states various measures which would make for a higher gen-

eral standard among insurance commissioners and the personnel of their offices, and which would provide for closer regulation and supervision of the companies, the Committee also recommended the utilization of Federal powers as a further step toward strengthening state regulation and making it more effective. Other recommendations called for a reduction in the number of policy forms in use and greater consideration to standardization of policy forms or policy provisions. The Committee also felt that a fundamental change in the conduct of industrial insurance should occur.

THE LIFE INSURANCE GUARANTY CORPORATION

In April, 1941, an act of the New York State Legislature established The Life Insurance Guaranty Fund Corporation supported by assessments on all life insurance companies domiciled in the state. The principal aim is to guarantee the payment of death benefits in the event of failure of any New York life insurance company coming under the terms of the act, and to handle any possible reinsurance of such companies. The act provides for a guarantee fund not to exceed \$25,000,000 to be raised when required for this purpose by assessment on domestic companies in proportion to their admitted assets. In view of the size of the companies domiciled in the State of New York, it is obvious that a guarantee fund not to exceed

FRATERNAL INSURANCE

(All U. S. Fraternal Orders Showing Figures)

(*Spectator Insurance Year Book*)

(Dollars in Millions)

Year	Number of Orders	New Business	Amount in Force (End of Year)	Assets (End of Year)	Total Income	Total Disburse- ments	Net Amount Received from Members	Paid for Claims
1940	215	\$522	\$6,282	\$1,253	\$223	\$166	\$158	\$118
1939	251	560	6,260	1,199	227	167	157	115
1938	243	559	6,348	1,134	218	162	155	111
1937	255	666	6,333	1,098	224	166	159	117
1936	249	586	6,164	1,039	212	167	150	116
1935	266	563	6,183	994	205	159	152	111

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\$25,000,000 very definitely limits the degree of additional security afforded to policyholders in other than the smaller companies. Furthermore, the guarantee as to performance of contracts is not absolute in as much as policies may be modified with the approval of the Superintendent of Insurance before the guarantee becomes effective. The establishment of the Corporation marks a new departure and may be contrasted with the bill proposed, but not passed, in Congress

which would provide Federal reinsurance of all life insurance policies up to a maximum value of \$5,000 on each life insured.

FRATERNAL INSURANCE

In most respects the year 1940 approximated that of 1939. The year ended with slightly less new insurance and slightly more insurance in force, as shown in the tabulation on the preceding page.

FIRE INSURANCE

BY EDWARD R. HARDY

SECRETARY-TREASURER, INSURANCE INSTITUTE OF AMERICA, INC.

GENERAL

The value of statistics lies in the fact that they present a truer and more easily understandable picture of happenings than mere statements can do. It might be assumed that, with the increasing activity in manufacturing operations in the United States in the past two years, there would be a substantial increase in the number of fires and the amount of fire loss. As a matter of fact, while the losses during 1941 showed an increase of approximately 5% over the previous year, this was almost entirely due to one fire. However, fire losses are showing generally a tendency to increase, but so are the premiums.

years 1939, 1940, and 1941 in the table below. This is furnished by the National Board of Fire Underwriters, the recognized authority in the compilation of such statistics.

LOSS RATIO

The loss ratio in fire insurance, which is commonly used, is the premiums earned divided by the losses incurred. In as much as 60 or more days may be taken to settle a loss, although a high percentage are settled in far less than that time, there always is a fair body of losses which are in process of settlement but which have been included in the loss ratio because the notice was received that the loss had occurred. Some years back a loss ratio of 50% might have been comfortably carried by the companies due then to the returns from invest-

FIRE LOSSES

The record of fire losses in the United States is shown for the three

	1939	1940	1941
January.....	\$27,615,316	\$36,260,650	\$26,470,000
February.....	29,303,520	34,410,250	26,102,000
March.....	30,682,168	29,788,800	31,471,000
April.....	27,061,522	26,657,190	29,330,000
May.....	27,031,700	23,446,590	25,637,000
June.....	24,190,700	19,506,000	24,943,000
July.....	22,468,304	20,322,800	23,698,000
August.....	22,800,500	20,722,100	24,122,000
September.....	22,837,250	21,198,000	24,668,000
October.....	24,300,500	22,091,140	30,833,000
November.....	27,248,160	23,449,000	23,822,000
December.....	27,059,200	28,617,000	31,261,000
Total 12 months.....	\$313,498,840	\$306,469,520	\$322,357,000

FIRE INSURANCE

ments and the lower expense accounts. These two factors have changed appreciably, and now it is almost necessary that the loss ratio should not exceed 45%. The present loss ratio hovers around this figure, but while the amount paid in losses may be increasing, it so happens that premiums are also increasing; the one counteracts the other.

FALL RIVER FIRE

On Oct. 12 occurred an historic fire which destroyed property estimated to be worth \$15,000,000. This was in a plant in Fall River, Mass. which makes devices in which rubber is the primary material used. There was on hand an enormous quantity of rubber, and its destruction occasioned the loss. The fire occurred in a building which, according to the information, was, if not perfectly, at least well protected by sprinklers, the highest form of fire prevention device known. The ovens for a manufacturing process in which the fire started were not sprinklered, but plans had been drawn and accepted for doing so. It is stated that the watchman assumed that the fire had been controlled; he shut off the sprinkler equipment, and it was not restored for some 15 minutes. That time was sufficient for the fire to master the property, and the heavy loss resulted. One of the insurance carriers, representing a large group of companies who write as a group, had what is reported to be the most severe loss in its history of 50 years. The amount of the policies involved in this group was \$5,000,000. The exact result of this loss and the insurance loss will not, of course, be known for some time, as the adjustment is a difficult problem with many intricate and complicated features.

RATES

There have been no substantial changes in the making of rates during the year. Those reductions which have taken place have followed the normal course, but there was no wide-spread reduction throughout the country, and under present conditions it is not likely that there will be any substan-

tial reductions in general. In some cases there might even be increases.

BROADER FORMS

The tendency of the last few years to develop broader forms of insurance, that is, to bring many risks into one policy, is slowly proceeding, but probably will be retarded due to war conditions. Fire insurance and all forms, for that matter, depend upon a relatively stable set of conditions over a period of years, although there may be variations one way or the other in some years. But if this average of certainty is disturbed, either by deliberate acts such as war or by government necessities created by war, then the problem of meeting the conditions is quite different, and the tendency naturally is to write on more conservative lines.

USE AND OCCUPANCY INSURANCE

This one form of insurance should be specifically noted because, although such policies have been sold for approximately 60 years in the United States and in the past year were sold in increasing numbers, the point has now been reached where they can not be looked upon as favorable policies to sell. This is due to the fact that this form of insurance, which makes good to the insured whose business has been interrupted due to fire what he would have made under normal conditions, pre-supposes that the insured will be able to obtain the material to repair his building and obtain the necessary raw material to carry on his business. Neither of these conditions can be met at the present time; it is perhaps sufficient to state that government priorities might even in the case of a large and important property make it impossible to replace the structures or to operate them if they were replaced. Insurance and economics both pre-suppose a certain measure of normal conditions; remove these and the problem becomes one of infinite complexity. In the case of this form of insurance an element of caution will be introduced which for a quarter of

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a century it has not been necessary to exercise.

While the ordinary business of fire insurance is affected by these factors, it is not affected to the same extent as the form of insurance just referred to. The owner of property will take into consideration the fact that it will cost him more to repair his house under war conditions than in peace time and probably will have increased his insurance to take care of that. In other words, the increased insurance, if agents are alive to their duty, may be expected to take care of the increased cost of repairing a destroyed or damaged property. This, of course, will not be true where the material can not be secured at all, which is the important factor in Use and Occupancy Insurance.

THE STANDARD POLICY

No immediate changes appear to be contemplated in the standard policy and probably will not be during the period of the war. Many of the changes proposed within the last five years are very desirable and some at least would have been adopted, but probably will not be at this time.

WAR RISKS

The fire insurance companies will not, unless to a limited extent, assume war risks; that is, damage done to property due to war operations. This, of course, is due to the fact that the element of certainty is lacking and the immense destruction which modern war has occasioned in some cities will at once make it evident why such forms of loss can not be secured by private enterprise which, at the most, has only limited funds. It is a proper form of protection for the government to undertake, because war is a burden upon all and should be shared by all.

In Great Britain provision was early made for the government to assume the war risk, and the details are handled through the regular insurance agents. It will be quite desirable that some such plan of handling the matter be adopted in this country.

THE GOVERNMENT AND INSURANCE

It is known that the government makes extensive loans on certain forms of agricultural products. Insurance has been carried as protection against these loans, but there is a tendency now—at least it is so reported—for the government not to require insurance on certain farm products, including cotton. There is some fear that this may lead to changes in the business of insurance and that is quite possible, but probably the government will not change its plans in spite of the fact that it may mean quite a loss to the agents in certain parts of the country.

SABOTAGE

Sabotage means the deliberate destruction of property being used in defense operations. This is normally done by an enemy wishing to retard the operations of a plant and so hinder the war preparations of the country. Here again statistics come somewhat to our aid. There undoubtedly are opportunities for sabotage, but there is no evidence to show that they are being largely availed of. Perhaps they are not considered as successful aids to an enemy as the more subtle psychological forms. The increase of \$16,000,000 in the fire loss in 1941 over 1940 can be explained almost entirely by the severe loss in the one fire at Fall River, and sabotage was not responsible for that loss.

MARINE INSURANCE

MARINE INSURANCE

By SAMUEL D. McCOMB

MANAGER, MARINE OFFICE OF AMERICA, NEW YORK

GENERAL

The national defense program dominated marine insurance business in 1941. All industries made necessary adjustments to put themselves on a defense production basis, and importers and exporters also adjusted their business to meet national requirements, necessitating an examination of both inland and ocean policies for proper coverage under new conditions.*

REACTION TO U. S. WAR ENTRY

Marine underwriters were prompt in putting themselves on a war footing. On Sunday, Dec. 7, Japan attacked Pearl Harbor; on Monday both the rating committee of the American Cargo War Risk Reinsurance Exchange and the war risk committee of the American Marine Insurance Syndicates promulgated new war risk rates for cargoes and hulls, drastically increasing rates in the Pacific, and all underwriters agreed to carry on. A war risk conference called by the Maritime Commission was held in the Commission's office in Washington on Dec. 17 at which the underwriters reported that there was a market available on hulls in hazardous wartime trades up to \$4,500,000 on any American steamer. In respect to cargo there was a sufficient market to take care of the requirements of all American importers and exporters and also a sufficient market to meet any demand for crew war risk insurance. Up to the actual outbreak of war, no war risk was covered on cargo between the over-seas vessel and shore nor was war risk generally written on cargo in harbors, rivers,

and inland waterways. It has now been arranged that inland craft of all descriptions and their cargoes can be protected against war risk. Marine underwriters thus completed arrangements to provide war risk for all American shipowners and shippers while their goods are water-borne for the duration of the war.

DEFENSE COMMISSIONS

During the year the Government took over all imports of certain essential commodities, such as rubber, tin and tungsten. This was accomplished by the formation by the Government of various commissions to arrange the purchase abroad of these materials, their transportation to this country, and their safe storage here to provide for a sufficient supply to meet defense needs. The marine insurance arrangements of these commissions are somewhat similar, so the methods of one may be given in detail to explain the general method of operation. Taking the Rubber Reserve Co. as an example: a purchasing board consisting of representatives of the five largest rubber companies in the country was appointed, all having offices abroad in the rubber-producing countries and familiar with all the trade customs and arrangements for procurement of rubber from the plantations and its handling to the ports of export where it is loaded aboard steamers to be brought to the United States. These companies also had certain facilities here where the crude rubber could be stored until it was needed. Operating in this manner, there was minimum disruption of private business, and at the same time the Government received the services of those most experienced in handling it. To arrange for insurance on this rubber from the time it was purchased abroad until it was taken out of storage for use here, was a

* United States' formal involvement in war with the Axis countries, coming as it did so late as December, did not essentially alter the Marine Insurance picture for the year, 1941 although presaging important developments for the near future.

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problem because of the very high values subject to one loss. Insurance brokers of the rubber companies were made a committee to handle the insurance requirements of the Government. Each of the rubber companies whose representatives comprised the purchasing board had their policies endorsed to cover the interest of the Government, and the cargo underwriters entered into a rubber reinsurance agreement by which the liabilities under the original policies were reinsured throughout the market giving the government the full insurance facilities of the country. The peak values at risk subject to one loss have in some cases exceeded \$6,000,000.

CHANGES IN OCEAN CARGO BUSINESS

During the past two years a most remarkable transformation has taken place in ocean cargo business. Prior to the outbreak of hostilities in Europe two years ago, our largest foreign trade was with Great Britain. There was also a large trade with Germany, France, the Scandinavian countries, and the Low Countries. As our neutrality law forbade American trading with countries at war, putting business with such countries or citizens thereof on a cash-and-carry basis with title passing before the goods could leave this country, cargo insurance written in this market on shipments to the countries actually at war dropped to almost nothing, as the goods were insured by the purchasers abroad.

The President declared a war zone around the British Isles and western Europe from Norway to northern Spain barred to all American ships; also Great Britain declared a blockade against Germany and Germany against Great Britain. When the Germans overran Norway and shortly after took Holland, Belgium, and the occupied areas in France, American trade with that part of the world was brought to a virtual standstill. This was promptly followed by Italy's entrance into the war, which in turn brought a change in the war zone as

proclaimed by the President. The new regulations closed the Mediterranean to American shipping, leaving only Portugal and part of Spain open to our ships. The only regular route to Europe for American ships was to Lisbon, which is also the terminus of the Pan American Clipper service flying the Atlantic. Regular trade with continental Europe virtually ceased. The greatest difficulties of cargo underwriters during the year were taking care of shipments that of necessity have been made on so-called "outside boats" and over new routes. When the Mediterranean was closed to American ships, practically the only vessels that could be procured to bring tobacco here from Greece and Turkey were some old Greek steamers. These had to go through the Suez Canal and around Cape of Good Hope, crossing the equator twice on the voyage. Losses on these shipments were very heavy.

TONNAGE AND RATE PROBLEMS

In many trades it is becoming increasingly difficult to secure sufficient tonnage to meet requirements, and not only is space scarce in some trades but ships are unsuitable. The British Government has commandeered not only the British merchant marine but that of Norway and the ships are operated where they will best serve British interests. The U. S. Maritime Commission has taken over the direction of the American merchant marine, and the delivery of lend-lease materials and importation of defense materials receive first consideration. Exporters and importers of civilian consumers' goods take such space as is left when government requirements, both British and American, have been met. To help improve conditions in the Western Hemisphere, Argentina and Brazil purchased a number of Axis ships which were interned for the duration of the war in their ports. Sixteen ex-Italian ships are available for operation by the Argentine Government in Western Hemisphere trade. It is expected that other Latin American Republics will follow a similar plan, and it is hoped that these

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ex-Axis ships and such of the new ships built in this country as the Maritime Commission can allocate to Western Hemisphere trade will provide sufficient tonnage to meet import requirements.

In 1940 the American Cargo Marine Reinsurance Clearing House appointed a committee to name rates on over-age steamers and those which do not come under the rate schedules in regular open policies. Of course, any rates named by them are purely advisory except for reinsurance placed through the Clearing House; nevertheless, in practice, their advisory rates have been generally used throughout the market. With the number of over-age and under-tonnage steamers now in service, this has been a very busy committee and its work has been of value to both shippers and underwriters.

WAR HAZARD SURCHARGES

Two years ago the question of surcharges arose. The surcharge is an additional to be paid on marine cargo policies for the increased hazards caused by war conditions which are not covered by war risk insurance, such as traveling in convoys, making zigzag courses, particularly in foggy weather, and entering and leaving ports without proper aids to navigation. In addition to the increased hazards in ship operation, there is also the congestion on docks and terminal facilities. British underwriters applied a surcharge generally to all shipments to or from Great Britain, but in this country underwriters restricted the surcharge to ports in the United Kingdom, Irish Free State, and continental Europe (including Petsamo and Murmansk), ports in the Mediterranean Sea, Black Sea, Red Sea, Baltic Sea, and on the Gulf of Aden, ports in French Morocco north of and including Casablanca, ports in Spanish Morocco, including Tangier and Gibraltar. In April the surcharge was made one-half of 1% except imports from the United Kingdom and the Irish Free State which were $\frac{1}{4}\%$. Metals in ingots or similar form—gold, silver, pre-

cious metals, and precious stones—took a rate of $\frac{1}{4}\%$. In June the marine surcharge was reduced on shipments from Portugal and Spanish Atlantic ports to $\frac{1}{4}\%$, shipments to Portugal and Spanish Atlantic ports remaining $\frac{1}{2}\%$. In July, on non-ferrous metals in ingots or similar form, gold, silver, precious metals, and precious stones to or from or calling at or transhipped at ports or places in the surcharge area, the surcharge rate was made 100% of the cargo surcharge rate, except where such interests are carried in properly constructed bulion rooms, in which case the rate should be 50% of these rates but not less than $\frac{1}{4}\%$. In October, to avoid misunderstanding, Archangel was specifically included as a port to which the surcharge was applicable. As of Jan. 1, 1942, English underwriters increased the surcharge, introducing a new feature—a higher surcharge on all risk policies and policies including theft, pilferage, non-delivery, shortage, etc., and a minimum additional on ordinary "with average" policies. This proposal was widely discussed here but no action was taken. It is quite probable that the surcharge will be revised along the lines of the latest revision of the British underwriters, and the area to which the surcharge applies will be increased. Something of this kind will be necessary because of the increased claims being produced by operation under war conditions.

SAFEGUARDING SHIPPING INFORMATION

In the spring of 1941 a few of the sensational radio commentators announced that the Axis countries may have been getting information regarding steamers carrying supplies to Great Britain, such as the sailing date, the consignment port, and the cargo, from bordereaux being sent by foreign companies doing business in this country to their home offices abroad. These statements were commented on in Congress, and the House Committee on Merchant Marine and Fisheries was requested to investigate. The report from the Chairman of the Maritime Commission showed the charges

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were absolutely without foundation, but nevertheless marine underwriters here decided that their affairs should be conducted in such a manner that there could be no similar accusations in the future. As a result, no information concerning business written is mailed until after the termination of any voyage involved, so that any bordereaux coming into Nazi hands would be valueless. No more messages giving names or sailing dates of vessels are sent by radio although cables are still used. Survey reports made by insurance organizations are kept confidential in the offices of these organizations and are not allowed to go out. Committees wishing to use these surveys look at them in the offices of the organization making the survey. Inspection reports of surveyors of individual underwriters are kept confidential in the office concerned, and safeguards are taken to prevent the leakage of any information. In addition, surveyors of the Board of Underwriters and surveyors working for underwriters are each furnished with an identification card to which the surveyor's photograph is attached. These cards are issued by the Board of Underwriters after investigation of each applicant, and steamship companies and shipyards' drydocks are required to see the identification card before people are admitted on their properties.

PIER FIRES AND LOSSES

A number of bad pier fires during 1941 in New York Harbor greatly disturbed all authorities. There was a fire at the Erie Railroad Terminal in Jersey City on May 31, and, in addition to the destruction of a grain elevator, there was a heavy loss in the adjoining Mid-Hudson Warehouse. Cargo losses in this fire exceeded \$2,000,000, and the Erie Railroad lost nine barges, two car floats, and some miscellaneous craft. Loss on the floating equipment exceeded \$150,000. A pier fire in Brooklyn in August completely destroyed Pier 27, and at the same time the SS *Panuco* which was discharging cargo was a

total loss. Damage to cargo on the steamer and on the dock exceeded \$500,000. On Nov. 7 there was another fire in Brooklyn at the yard of the Robins Dry Dock & Repair Co. which damaged two floating drydocks, the loss being approximately \$350,000. Fortunately this fire was controlled and did not spread to the steamers at the yard undergoing repair.

During the year the Bureau of Marine Inspection & Navigation promulgated and enforced new rules for loading hazardous commodities, and a law was passed giving supervision of the ports to the Coast Guard. This new law gives them very great authority in insisting on all docks and piers being properly safeguarded from a fire-protection standpoint; they are also guarding against possible sabotage. Surveyors of the Board of Underwriters are working in close co-operation with government departments in supervising the safe loading of ships. Cargo underwriters have put their business on a wartime basis and in every way possible are cooperating with all government departments having to do with our foreign trade.

CARGO LOSSES

In respect to losses on cargoes, the most serious during 1941 were in connection with shipments of tobacco from Greece and Turkey. Seven Greek ships with tobacco cargoes sailed for this country around the first of the year. Considerable delay was encountered in getting them from Greek ports through the Suez Canal, and they had to come by the Cape of Good Hope. There was further delay awaiting convoy and difficulty in obtaining coal, the result being that the voyages consumed from 97 to 147 days. All arrived with serious damage to the tobacco in the following amounts:

	Approximately
SS <i>Kalingo Hadjipatera</i>	\$ 650,000
SS <i>Ioannis P. Goulandris</i>	1,000,000
SS <i>Samir</i>	1,000,000
SS <i>Tassia</i>	325,000
SS <i>Anghyra</i>	380,000
SS <i>Maliakos</i>	200,000
SS <i>Lina Mathoric</i>	100,000

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The most serious loss of the year was in October at the plant of the Firestone Rubber & Latex Co., Fall River, Mass. Fire insurance authorities say this is the largest single loss that has ever occurred in the United States. Loss to cargo underwriters on rubber stored there was in the neighborhood of \$10,000,000.

Taking it as a whole, it is probable that cargo underwriting for the year will be unprofitable which might be considered the most compelling reason for an increase in surcharges since war conditions were responsible for the bad experience.

INCREASED VALUATION ON HULL BUSINESS

In hull business the most outstanding feature has been increased valuations. On practically every renewal during the year the amount of insurance carried was increased. Some steamers were insured for twice as much as they were a year ago. Valuations of existing tonnage still seem to be increasing. This larger amount of insurance being carried has to some extent offset the increase in cost of repairs, which is still going up. Underwriters have received additional premium through increased valuation rather than through an increase in rate which in most cases has remained fairly steady. The American Marine Insurance Syndicates have adopted a Syndicate trading warranty which is a revision of the Institute trading warranty eliminating Russia, so that the Arctic ports of Murmansk and Archangel and, in the Far East, all Siberian ports, including Vladivostok, are eliminated from the regular trading warranty but specific voyages may be covered for an additional premium. Up to November the Neutrality Act prevented any American ship from going to war zones as declared by the President but, as amended, these restrictions have now been removed, and American ships have the legal right to travel anywhere.

BUILDERS RISK INSURANCE

The ships being built for the Maritime Commission are insured by

builders risk policies issued by Syndicate C of the American Marine Insurance Syndicates. Ships being built for the Navy outside of Navy Yards and for other departments of the Government excepting the Maritime Commission are insured in the Builders Risk Syndicate. Under the new programs of both the Maritime Commission and the Navy, the number of ships being built is larger than at any other time in the history of this country. Every existing yard is working to capacity, and new yards are being constructed. The Syndicates arranged for inspections of all these yards from the fire prevention and safety standpoints. The shipyards, Navy, and Maritime Commission have all cooperated with the Syndicates' inspection service in making these yards as safe as possible to prevent losses which would delay these much needed ships.

Rates for builders risk-insurance are determined by formulas which have been approved by the Maritime Commission and Navy Department, the rate depending on the construction of the yard, the buildings therein, the slip ways, and the yard's experience from a loss standpoint.

The most severe loss to hull underwriters was the steamer *Manhattan* which, on a voyage from New York to the Pacific Coast via Panama Canal, stranded near Palm Beach, Fla., on Jan. 12. Cost of repairs to this vessel exceeded \$2,000,000 and there is a further claim for salvage operations not yet settled. The steamer *Gatun* of the Standard Navigation Corp. stranded at Jacmel, Haiti, on July 6, with a loss of approximately \$260,000, and the SS *Dilworth* stranded in Narragansett Bay on Sept. 20, resulting in a loss of approximately \$150,000.

WAR'S EFFECT ON TRADES ROUTES AND RATES

War risk insurance probably took more of the underwriters' time during the year than the regular marine business, due to the rapid and unexpected changes in the political situation. The German advance through

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the Balkans and the capture of Greece and Crete necessitated an immediate change in trade to the Near East, which was complicated by the necessary withdrawal of British forces from Libya back into Egypt. Germany's sudden attack on Russia in June, with her startling initial successes, also affected the situation in the Near East. This was accompanied by a very large increase in shipments from this country to the Red Sea area and later to the Persian Gulf. Meanwhile the situation in the Far East continued to get worse from the view point of this country. American occupation of Iceland in the summer greatly increased shipment of supplies there; this was followed by shipping supplies to Archangel. It seemed that every month there was a change in the world situation—new trade routes opened up and war rates made to meet the new conditions.

Fortunately underwriters were well organized to handle the war risk requirements of shipowners and shippers engaged in foreign trade. The American Cargo War Risk Reinsurance Exchange, through which all cargo war risk business is cleared, has a practically unlimited capacity. The Ex-

change's war risk committee met on an average of three times a week to discuss changed situations. However, through it all, rates remained remarkably steady, and the average rate was probably lower at the end of 1941 than it was a year before.

At the beginning of the war, in Western Hemisphere trade, there was a preferential rate given to American flag ships. These had the lowest rates, ships of neutral flag were somewhat higher, and belligerent considerably higher. However, as it became clear that the Nazis would torpedo American ships, the preferential in their favor was eliminated, and cargo on all ships of Latin American countries takes the same rate as American flag. Of course, cargo on belligerent flag ships pays a higher rate. From time to time there has been a demand for a longer coverage at transshipping points. The war risk policy allows 15 days. This time has not been extended.

CARGO WAR RISK CLAIMS

The cargo war risk market here has had some very heavy claims, the principal ones being the following:

SS <i>Speybank</i>	(British)	Captured by German raider around Jan. 31, 1941. Cargo loss \$786,000.
SS <i>Petalli</i>	(Greek)	Destroyed by fire in bombardment of Piraeus in German invasion of Greece, April, 1941. Cargo loss approximately \$3,000,000.
SS <i>Zamzam</i>	(Egyptian)	Sunk by German raider in south Atlantic enroute from N. Y. to Egyptian ports, May, 1941. Cargo loss \$353,000.
SS <i>Robin Moor</i>	(American)	Sunk by German submarine enroute from N. Y. to South Africa, May, 1941. Cargo loss \$498,000.
SS <i>Kota Nopan</i>	(Dutch)	Sunk by German raider enroute from Dutch East Indies to U. S. Atlantic ports, August, 1941. Cargo loss \$1,629,000.
SS <i>Silvaplana</i>	(Norwegian)	Assumed to have been sunk by German raider enroute from Dutch East Indies to N. Y. Cargo loss estimated at approximately \$2,000,000.

Hull war risk business increased continuously during the year. At the outbreak of hostilities two years ago a number of American owners in the coastwise and intercoastal trade and even some owners in the West Indies and South American trade did not consider it necessary to take out war risk insurance. However, as ships were sunk in the West Indies and off Brazil and it was known that

German raiders were in the Pacific not far from the Panama Canal, the demand for insurance increased and particularly after the Germans had torpedoed some American destroyers and the Navy received orders to shoot on sight. Fortunately war losses on American hulls insured in the Syndicates have been slight, the heaviest one being on the *Robin Moor* already mentioned under cargo

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losses. War risk loss on this hull amounted to \$560,000. There was also some damage to the SS *Arkansan* while discharging cargo at Suez in September 1941.

Underwriters watched with great interest the effect of the amendment of the Neutrality law. Up to November, American boats were trading only in safe zones, being barred from all combat zones; now they can navigate all over the world. No change whatever had been made in these rates. The attitude was to wait and see. This same attitude applied to the Far East situation. The factors resulting from the December war declarations, while tending to resolve all doubts, had not yet fully developed at the year end.

INLAND MARINE DEVELOPMENTS

There were no outstanding devel-

opments in the Inland Marine field during 1941. Several additional states recognized the Personal Property Floater policy. Of particular interest is the approval of this form in Rhode Island as of Nov. 1, 1941, the first of the New England or Mid-Atlantic states to have approved this contract.

There is widespread interest concerning the possibility of the approval in other states where presently the form is not permitted. Apart from the few changes normal to the conduct of business in any one year the situation has changed very little.

Local underwriters have found a tremendous increase in liabilities by reason of the increase necessitated by defense production. This has involved not only additional limits of liability for property in transit but has brought to the fore innumerable requests for extension of coverage to include property in process at various locations.

CASUALTY INSURANCE AND CORPORATE SURETYSHIP

By G. F. MICHELbacher

VICE PRESIDENT AND SECRETARY, GREAT AMERICAN INDEMNITY COMPANY

CASUALTY EXPERIENCE EXHIBIT

(Calendar Year 1940)

As a starting point, the complete countrywide experience of 78 stock insurance companies for the calendar year 1940 is presented in the tabulation next page.

This exhibit shows two trends: (1) an increasing volume of business; (2) a diminishing underwriting profit. In general it may be said that both trends continued to function during 1941 with perhaps some acceleration of pace. The record for the year, when available, should show an increase of at least 10% in the aggregate premium volume and a material reduction in the percentage of underwriting profit. The reasons for these developments will be apparent when the more important lines of coverage are discussed.

AUTOMOBILE INSURANCE

In this field there was a definite change of trend so far as accident frequency and severity rates were concerned. Motor vehicle deaths in the first ten months of the year totaled 31,620, 16% greater than the ten-month 1940 figure of 27,210. Coming on the heels of drastic rate reductions initiated in preceding years, this substantial change in conditions materially affected the underwriting results of insurance companies. The underwriting loss on property damage liability coverage was definitely increased, and the underwriting profit on bodily injury coverage was drastically reduced if not eliminated entirely.

Sidney J. Williams, Director of Public Safety of the National Safety Council, after noting that the increase in accident frequency in 1941 was al-

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Line of Coverage	Earned Premiums	Incurred Losses Excluding Claim Expense	Incurred Expense	Underwriting Profit (+) or Loss (-)
Accident.....	39,274,971	15,392,534	20,447,382	+ 3,435,055
Health.....	29,102,386	20,789,120	9,780,324	- 1,467,058
Automobile Liability.....	176,000,158	79,207,079	86,460,539	+10,332,540
Automobile Property Dam- age Liability.....	49,689,778	26,397,694	26,626,939	- 3,334,855
Automobile Collision.....	3,449,470	1,525,402	1,714,241	+ 209,827
Liability Other than Auto....	75,583,894	22,860,346	45,655,787	+ 7,067,761
Property Damage and Colli- sion Other than Auto.....	4,874,191	1,299,310	2,699,592	+ 875,289
Workmen's Compensation....	132,793,697	74,141,517	57,646,808	+ 1,005,372
Fidelity.....	36,832,332	8,292,186	21,075,929	+ 7,464,217
Surety.....	42,944,688	5,120,979	28,581,497	+ 9,242,212
Plate Glass.....	9,270,168	4,075,761	5,526,770	- 332,363
Burglary and Theft.....	24,062,188	5,763,166	13,656,393	+ 4,642,629
Boiler.....	7,735,240	943,434	6,885,942	- 94,136
Machinery.....	3,915,487	1,051,110	2,808,901	+ 55,476
Credit.....	2,456,711	466,593	1,657,432	+ 332,686
Sprinkler Leakage.....	618,567	227,716	349,708	+ 41,143
Miscellaneous*.....	1,542,331	1,536,171	438,389	- 432,229
Totals for 1940				
78 stock companies.....	640,146,257	269,090,118	332,012,573	+39,043,566
Totals for 1939				
77 stock companies.....	619,192,928	252,685,794	321,001,480	+45,505,664
Totals for 1938				
66 stock companies.....	602,542,318	237,553,212	310,393,797	+54,595,309

* Miscellaneous includes Live Stock, Non-Cancellable Accident and Health and Workmen's Collective.

most equal to the mathematical expectancy based on the increase in registered motor vehicles and traffic volume, thus reversing the more favorable trend of the period 1934 to 1939 during which accident frequency and severity rates failed to keep step with the mathematical expectancy, offered the following explanation:

1. "Construction and operation of huge defense industries, urban, suburban and rural, without provision for the enormous passenger and truck traffic which results.
2. "The transplanting of hundreds of thousands of military personnel to new and different parts of the country—with their lack of familiarity with local traffic regulations and customs, and the incomplete coordination of military and civilian control of these men when they drive and walk on the public highway.
3. "Political changes: some traffic departments weakened; new men, in key positions, who have

not yet learned how to handle their traffic responsibilities.

4. "War jitters, by which I mean: hurry, justified or not; more money to spend, and some of it spent for liquor; pre-occupation with the troubles of the world and personal troubles growing therefrom; a general 'here to-day gone tomorrow, so what's the use?' attitude."

All of which must be rather discouraging to those persons whose business it is to cope with the problem of traffic safety.

SAFETY INVESTIGATION AND PLANS

In this connection some interesting facts were disclosed during 1941 in a report of an investigation conducted by Dr. Leon Brody for New York University's National Center for Safety Education. Based upon a careful analysis of the experience of accident-repeaters and drivers with good records, Dr. Brody's report developed four tests involving systolic blood

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pressure, ability to see to the side, ability to pass on the road, and correctness of response under pressure of time, which enabled him to identify successfully each of the two types of drivers. Out of such investigations there may come in time a new technique for licensing drivers which will get to the roots of the problem of safe driving.

Rates and rating plans were not changed materially during the year although definite sentiment has been slowly accumulating against the "Safe Driver Reward Plan" under which private passenger car policyholders in certain states are given a reward equal to 15% of the annual premium for perfect driving records. This stabilization of rates in the face of increasing accident frequency and severity will undoubtedly have a serious influence in 1942 upon underwriting results. It is certain that conference companies will suffer moderately, and it will be interesting to discover whether non-conference companies whose rates for the most part are on a still lower level will be able to maintain their positions.

POLICY COVERAGE UNDER BASIC AUTOMOBILE POLICY

Policy coverage in general was broadened by a series of moves affecting the Basic Automobile Policy used by most of the companies. A few illustrations of this activity follow:

1. In order to facilitate the efforts of the Federal Government to conserve gasoline and oil, the policy exclusion relating to carrying persons for a charge was eliminated. Thus one vehicle can now carry a number of paying passengers without being subject to the previous 10% additional premium requirement.
2. The age exclusion upon drivers was eliminated.
3. A provision was introduced providing that assault and battery shall be deemed an accident unless committed by or at the direction of the policyholder.

4. Automatic insurance for newly-acquired automobiles was extended from ten to 30 days.
5. The policy now covers temporary use of automobiles substituted for insured automobiles withdrawn from use due to mechanical breakdown, repair, servicing, etc. The insurance applicable to such substitute automobiles is excess insurance.

AUTOMOBILE INSURANCE LEGISLATION

The flood of legislation affecting automobile insurance continued unabated. Perhaps the most significant measure enacted was the New York State Motor Vehicle Safety-Responsibility Law which became effective Jan. 1, 1942. This law is a substitute for compulsory automobile insurance. Its purpose is to make certain that, unless a person involved in an automobile accident is able to pay damages, neither he nor his car may again operate in New York State until the requirements are met. If an uninsured person is involved in an accident causing personal injury or property damage in excess of \$25, his operator's license and the car's registration are canceled until he makes satisfactory arrangements to pay claimants and procure insurance or other evidence of financial responsibility for possible future accidents. Moreover, the car involved in the accident may not be sold, nor may it be registered in anyone else's name. Thus, without using compulsion as is done in Massachusetts, a powerful incentive is created for every motor vehicle owner to insure his car voluntarily in order to escape the consequences of the law. This type of legislation may provide the answer to the problem of the financially irresponsible motor vehicle owner.

WORKMEN'S COMPENSATION INSURANCE

The satisfactory experience of recent years continued to influence rates

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downward because of the use of a rate-making formula which utilizes past experience and avoids an attempt to predict future trends except where the benefit schedule of the local workmen's compensation law has been amended. Thus, in 36 revisions of state rates which were intended to become effective in 1941, the proposal of the National Council on Compensation Insurance was to increase the rate level in only 11 cases, and in the majority of these cases the increase reflected a legislative change in benefits rather than adverse developments in underwriting experience.

In spite of the reductions in rate level, premium volume increased and underwriting results improved during the year under the stimulus of the national defense program which materially increased employment and wages in non-defense as well as in defense industries.

The construction of army cantonments, ordnance depots, explosive manufacturing plants, aircraft fields, defense housing facilities, and a multitude of other projects under conditions such that the Federal Government paid directly the cost of insurance, led to the formulation of a novel plan of rating for such risks. This came after a period of intense competitive activity during which stock companies were at a definite disadvantage in competition with mutual companies because Federal authorities anticipated the dividends of the latter, thus enabling them to use their "net cost" in bidding. The "Comprehensive Rating Plan for National Defense Projects," finally adopted in most states, is mandatory for contracts performed for the War Department, Bureau of Yards and Docks of the Navy Department, the Maritime Commission, and the Federal Works Administration. It is a device employing the principles of retrospective rating under which the cost of workmen's compensation, public liability, property damage liability, and automobile coverage required by governmental authorities is determined on the basis of actual current experience between an established minimum and a maxi-

mum equal, in the case of workmen's compensation insurance, to 90% of the normal standard premium and in the case of public liability, property damage liability, and automobile insurance to 50% of the normal standard premium. A debatable feature of the plan is the provision under which the insurance agent or "adviser" is required to look to the contractor rather than to the insurance company for his fee, which is fixed by governmental decree. Agents generally criticize this innovation and fear that it may have far-reaching future consequences.

As a result of developments in rating national defense contracts, it seems certain that radical changes are in prospect in normal methods of rating workmen's compensation insurance risks. These will involve graduation of company expenses and agency commissions according to the size of individual risks, and it is likely that the principle of retrospective rating may become compulsory for larger risks with the standard premium as the maximum cost of insurance. In fact, a plan of this character has only recently become effective in Pennsylvania and Delaware. Any move in this direction will be welcomed by stock insurance companies operating on the non-participating plan as it will improve the position of these carriers in competition with carriers issuing participating policies.

An interesting compilation of experience on undesirable risks voluntarily assumed by privately-managed insurance companies after assignment in a number of states has been published by the National Council on Compensation Insurance. As of Oct. 1, 1941 the experience of 1,052 risks so assigned showed earned premiums of \$501,760 and actual incurred losses of \$280,518, thus indicating an average loss ratio of slightly less than 56%. This is remarkable when it is borne in mind that each of these risks was declined as normally uninsurable by at least three insurance companies. Perhaps there will be some change in underwriting policies as a result of this experience.

CASUALTY INSURANCE AND CORPORATE SURETYSHIP

MISCELLANEOUS PUBLIC LIABILITY AND PROPERTY DAMAGE LIABILITY

During 1941 the program of the National Bureau of Casualty and Surety Underwriters for the development and publication of separate manuals for each of the six forms of coverage in this field was completed. The Owners', Landlords' and Tenants' Liability Manual was promulgated in 1939. The Elevator Liability Manual and Products Liability Manual followed next, effective in 1940. The remaining three separate manuals for Contractual Liability, Manufacturers' and Contractors' Liability, and Owners' and Contractors' Protective Liability Insurance became available during 1941.

For the most part, there were few changes in rates although countrywide teams rates were reduced approximately 6% for bodily injury and 14% for property damage liability coverage, and countrywide owners' and contractors' protective liability rates were slightly increased for bodily injury and substantially reduced for property damage liability coverage. There were, however, many changes in rules and classifications, two of general interest being as follows:

1. The definition of bodily injury liability insurance (public liability insurance) for all forms of coverage in all manuals was broadened to include liability for damage due to sickness or disease caused by accident.
2. The "additional interest" rules permitting inclusion of interests other than those of the named policyholder were broadened to cover without additional charge stockholders on policies written for corporations.

Further progress was made in the development of comprehensive forms of bodily injury and property damage liability coverages and in the rating of risks of this character.

BURGLARY, THEFT AND ROBBERY

Here there were a few changes in rates for mercantile safe insurance,

storekeepers' burglary and robbery insurance, and interior robbery insurance, and only minor changes in coverages.

The declaration of war brought up for immediate consideration the necessity of a war-risk exclusion in a number of "all-risk" coverages inherited by casualty insurance companies in the allocation of border-line coverages between fire and casualty insurance companies. Typical policy forms involved are "accounts receivable," "money and securities destruction," and "safe depository liability." The war-risk exclusion was added to all these policies because of the large exposures and wide-open coverage.

The general question of "war-risk" coverage was referred to a committee of executives which will study it with reference not only to burglary, theft, and robbery, but also to all other forms of casualty insurance coverage where the problem may arise.

PLATE GLASS INSURANCE

A countrywide revision of rates was approved late in 1941 on the basis of accumulated experience, demonstrating conclusively that plate glass insurance had been written for several years at a loss. The new rates which increased the countrywide rate level approximately 4% should improve the underwriting results for 1942 although the advent of war conditions may largely increase labor and material costs incidental to the replacement of broken or damaged plate glass if it does not also introduce a problem of "priorities."

A Plate Glass Division was formed during 1941 in the Association of Casualty and Surety Executives. The function of this new division will be to survey the glass replacement situation countrywide and to make recommendations to the members which should result in more uniform replacement costs and in the possible elimination of glaziers who indulge in questionable business tactics.

FIDELITY AND SURETY

The national defense effort imposed serious responsibilities upon bonding

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departments. An enormous volume of suretyship was required; the commitments for individual contractors in many cases were abnormally large, and the financial worth of many contractors was not equal to the amount of suretyship sought. Nevertheless, the business acquitted itself satisfactorily by meeting the many onerous requirements expeditiously and well.

INVESTMENTS

The trend toward lower returns on investments in bonds and preferred stocks continued to harass casualty insurance companies whose reserves, because of their nature, must largely be invested in securities of these types. During the year several large

life insurance companies were forced to announce higher rates predicted upon anticipated interest earnings of from $2\frac{1}{4}\%$ to $2\frac{3}{4}\%$ on their reserves. While insurance laws offer greater latitude in the investments of casualty insurance companies, the latter are confronted with essentially the same problem, and it is obvious that the future will see a diminution of their investment earnings. This may not prove to be an unmixed evil as such a development will force greater efforts to bolster underwriting earnings and thus promote greater conservatism in the production and underwriting phases of the business where a recent period of substantial earnings has bred all manner of irresponsible competitive practices.

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(From *The New York Times*)

Jan. 1—Federal Reserve proposes measures to guard the country against inflation. Recommends larger powers be granted board to increase banking requirements; ending of President's power to devalue the currency; selling of Federal bonds to individuals and corporations instead of only to the banks; insulation of imported gold from bank reserves.

Jan. 3—Treasury's gold holdings pass the \$22,000,000,000 mark. Steel production, which had fallen in Christmas week to 80% of capacity, recovered in opening week of January to 97%, matching highest of 1940.

Jan. 8—President submits \$17,485,529,049 budget to Congress for the next fiscal year, \$10,811,000,000 to be used for defense purposes and \$6,674,528,049 for other government activities. The President proposes new taxes, though giving no details, and indicates that non-defense and non-fixed government expenditures would be cut 15%. Deficit for new fiscal year was put at 9 billions. Steel production for week advanced

from 97 to $97\frac{1}{2}\%$ of capacity, highest weekly rate reached in wartime.

Jan. 9—Stock and bond markets at best levels of new year, with bond transactions largest since Sept. 27, 1939. Stock averages $\frac{1}{2}$ point higher; sales 858,860 shares.

Jan. 14—Stock market easier for third consecutive session, with averages down $\frac{5}{8}$ point; sales 468,910 shares. Steel production for week advanced from $97\frac{1}{2}$ to $98\frac{1}{2}\%$ of capacity.

Jan. 15—Stock averages $\frac{5}{8}$ point lower in dullest trading since Oct. 21; sales 396,580 shares.

Jan. 20—Roosevelt inaugurated for third time.

Jan. 22—Steel production of 99 per cent is described by Iron Age as "highest percentage rate since 1929 and highest tonnage rate ever recorded, since capacity is considerably greater now than in 1929."

Jan. 23—Colonel Charles A. Lindbergh tells House Foreign Affairs Committee that in his judgment a negotiated peace now would be to the best interests of the United States and that American aid to

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- Britain would have no bearing on the outcome of the war.
- Jan. 29—New York stock market 1 to 3 points lower, averages losing $1\frac{5}{8}$ points, lowest since Aug. 20. Seat on New York Stock Exchange sells for \$30,000. Weekly steel production put at 97 per cent of devised capacity.
- Jan. 31—New York Stock Exchange seat sells for \$27,000, or \$3,000 lower than the previous transaction and the lowest price since 1898.
- Feb. 4—Stock market averages lowest since last June in duldest trading since Sept. 16. Weekly steel production down from 97 to 96%, wholly due to closing of several furnaces for temporary repairs. *Iron Age* adds that "most of the larger plants are operating at slightly above or below 100%."
- Feb. 5—Stocks at N. Y. recover 1 to 2 points, with averages closing a point higher for the first time in 8 sessions; sales 492,860 shares.
- Feb. 8—House votes lend-lease bill 260-165. Vichy reports break in negotiations with Pierre Laval.
- Feb. 9—British warships attack Genoa. Churchill in broadcast says that Britain will win if we send the "tools," and warns that the war would soon become more terrible.
- Feb. 12—Mussolini and General Franco of Spain meet in Italy.
- Feb. 13—Stocks at N. Y. lose 1 to 2 points, touching lowest level of current decline; sales 642,940 shares. Weekly steel output a point higher at 97 per cent of capacity.
- Feb. 14—Yugoslav Premier and Foreign Minister meet Hitler at Berchtesgaden. Senate votes \$65,000,000,000 debt limit. U. S. production of war planes in January doubles output of year ago. Heaviest selling of year on N. Y. Stock Exchange. Stocks down 1 to 5 points, averages closing 2½ points lower. Sales 933,740 shares. Foreign and domestic bonds lower.
- Feb. 19—House votes to fortify Guam, sharply criticizing Japan in debate. Stocks go to new lows for current movement, averages closing $\frac{3}{4}$ point lower; sales 465,430 shares. Weekly steel production 96 per cent, against 97 the week before.
- Feb. 20—N. Y. stock market registers widest recovery since Nov. 7, with stocks 1 to 3 points higher and a gain of $1\frac{1}{2}$ points in averages. Sales 451,630. Best advances of the day coincided with dispatches from Turkey denying that Turkish-Bulgarian pact would give Axis free passage of troops to Greece.
- Feb. 21—Stocks closed fractionally higher in second duldest trading in five months; sales, 298,590 shares.
- Feb. 25—Stocks at New York advanced fractionally for fourth consecutive session. Averages $\frac{5}{8}$ point higher; sales 357,230 shares. Wheat fractionally lower. Weekly steel output 97 per cent against 96 per cent week before.
- Mar. 1—German troops occupy Bulgaria after that country enters Axis alliance at Vienna. Smallest Saturday trading on Stock Exchange in 6 months; sales 141,190 shares.
- Mar. 4—Hitler sends emissaries to Turkey. Stocks in N. Y. improve moderately in light trading; sales 307,890 shares.
- Mar. 5—Stocks lose $\frac{1}{2}$ point in lightest trading in 6 months. Weekly steel production 98% of capacity, against 97% week ago.
- Mar. 6—Prices on Stock Exchange recover 1 to 3 points in largest trading since Feb. 14, averages closing $\frac{7}{8}$ point higher. Sales 480,010.
- Mar. 8—Senate passes lease-lend bill 60 to 31. Stock market closes week with second smallest Saturday trading in 6 months; sales 153,290 shares.
- Mar. 10—Vichy Government appeals to U. S. for food and threatens to use its navy to break British blockade. Stocks at N. Y. advanced 1 to 3 points in heaviest trading in month.
- Mar. 12—Weekly steel output 99 per cent.
- Mar. 17—Stock market dull, with averages fractionally lower; sales, 378,350 shares.

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- Mar. 19—Weekly steel production 99½% of capacity, against 99% week before.
- Mar. 20—Senate passes appropriations of \$3,866,000,000 for national defense. N. Y. stock market fractionally higher; sales, 490,140 shares.
- Mar. 26—Government orders reopening of strike-bound Allis-Chalmers plant. Stocks at N. Y. fractionally higher; sales, 534,020 shares. Weekly steel production 100% of capacity.
- Mar. 31—German envoy quits Yugoslavia. Premier says Yugoslav Army is ready to fight if necessary. Stocks fractionally higher in dull trading; sales, 435,610 shares.
- Apr. 2—C. I. O. orders strike at Ford River Rouge plant. Weekly steel production continues unchanged at 100% of capacity.
- Apr. 3—Stocks at N. Y. rallied fractions to 2 points in heaviest trading since year-end, averages gaining nearly a point; sales 940,560 shares.
- Apr. 7—Stock market fractionally lower in dull trading; sales 359,770 shares.
- Apr. 14—Major steel producers increase wages 10¢ an hour averting a strike. Stocks recover after touching new lows for the year but averages ended the day fractionally higher; sales 458,700.
- Apr. 16—London bombed for eight hours in worst raid since start of war. Government freezes steel prices at levels prevailing during first quarter of 1941. Industrial stocks touch new lows for the year, but combined average virtually unchanged; sales 437,460 shares. Steel production rate 98½ per cent of capacity against 99 per cent week before.
- Apr. 18—Stocks at New York declined to lowest levels since June 10, 1940, averages losing 1½ points; sales 485,280 shares.
- Apr. 19—Greeks and British retreating in Greece. Stocks fractionally lower; sales 230,110.
- Apr. 20—President announces United States-Canadian pact for cooperation in the production of war materials for Great Britain.
- April 23—Stocks rally after touching new low ground; averages closing ½ point higher; sales 474,000 shares. Weekly steel production 2½ points lower at 96 per cent of capacity.
- April 27—Germans enter Athens.
- April 28—Soft coal strike ended after President Roosevelt intervenes. Stock averages fractionally higher in dull trading since March 5; sales 310,810.
- April 30—Weekly steel production 94 per cent of capacity against 96 per cent week before.
- May 1—Defense bonds and stamps go on sale. Stocks at lowest levels of the year in dull session; sales 310,040 shares.
- May 6—Sec. Stimson in radio broadcast urges that the Navy be used to assure delivery of American-made munitions to Great Britain. Stocks advanced 1 to 2 points in third largest session of year, averages gaining ⅞ point; sales 907,940 shares.
- May 7—Sec. of the Navy Knox says that U. S. resources are dedicated to preservation of the British Navy, which he described as safeguarding this country. House of Representatives votes 266 to 120 to seize foreign ships in U. S. ports. Stocks at N. Y. fractionally higher in less active trading; sales 558,560 shares. Weekly steel output 97½% of capacity, an increase of 3½ points for the week.
- May 10—London suffers worst air raid of war. House of Commons, Westminster Abbey and British Museum damaged. West Coast shipyards closed by strike. Stocks at N. Y. gain fractions to 2 points, reaching best levels since mid-April. Averages ⅜ point higher; sales 377,170 shares.
- May 11—Ex-President Hoover warns that convoying means war.
- May 12—Rudolf Hess, deputy leader of the German Nazi party and third most powerful figure in the Reich, lands by parachute in Scotland after apparently escaping from

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- Germany. Tokyo Stock Exchange weak on rumors that U. S. will become involved in war. Stocks at N. Y. moderately lower, averages losing $\frac{1}{2}$ point; sales 435,320.
- May 14—Senate passes crop loan bill by vote of 75 to 2. May wheat closes at \$1.01 $\frac{1}{2}$, a gain of 4 $\frac{3}{8}$ ¢ for the day. Corn, at 4-year high, closes at 73 $\frac{3}{4}$ ¢. Weekly steel production 99 $\frac{1}{2}$ %, gain of 2 points for the week.
- May 17—Trading on Stock Exchange duller Saturday since Aug. 24. Averages fractionally higher; sales 140,540 shares.
- May 18—Sec. Hull in radio broadcast outlines post-war reconstruction program based on access to raw materials for all nations and prohibition against trade barriers.
- May 19—Day-old anthracite strike ended. Miners receive pay increases and sign two-year agreement with operators. Stocks fractionally higher in duller full-day session since Aug. 26; sales 223,010 shares. Bond trading was only \$4,120,000, which was the smallest full-day's trading since Sept. 16, 1940. Wheat rises 4 cents a bushel following Secretary of Agriculture Wickard's statement that President Roosevelt favors parity prices this year for basic crops, and closes day with gain of 2 cents. Cotton closes 1 to 5 points lower after gains of 11 to 17 points during day. Steel and Iron Institute reports steel output at 99.9 per cent of capacity.
- May 21—Previous day's gains on Stock Exchange extended, averages gaining fractionally; sales, 544,200 shares. Weekly steel production $\frac{1}{2}$ point higher at 100 per cent. Highest since late March.
- May 22—Commodities sharply lower on reports that Administration is planning to institute price controls. Wheat losses 3 $\frac{3}{4}$ cents on day; cotton, after falling 20 points, shows net decline of from 5 to 7 points. Stock averages $\frac{3}{8}$ point lower; sales 401,530 shares.
- May 23—Stock Exchange transactions fall to 261,580 shares, which, with the exception of Monday's 223,101, was smallest full day's business since last August; averages fractionally lower.
- May 28—Week's steel production declines from 100 per cent of capacity to 99.
- June 3—N. Y. stock averages gain more than a point in broadest rally since Feb. 20; sales 417,940 shares. Wheat closes 1 $\frac{1}{8}$ ¢ higher.
- June 4—Weekly steel production $\frac{1}{2}$ point higher to 99 $\frac{1}{2}$ %.
- June 7—President Roosevelt ready to take over strike-bound North American Aviation Co. in California unless strike is ended tomorrow. Stock market ends week at best levels since early April. Trading largest for any Saturday since May 10. Wheat at new high for season; net gain of 2 $\frac{1}{2}$ ¢ for day.
- June 9—U. S. Army takes over strike-bound North American Aviation Co. Wheat and cotton higher.
- June 10—Mussolini, speaking on anniversary of Italy's entry into the war, charges that U. S. is already in the war and that Japan would not remain indifferent before American "aggression." American freighter, *Robin Moor*, reported torpedoed May 21 by German submarine 950 miles off Brazil. Stocks at N. Y. extend gains 1 to 3 points in largest and broadest session in a month. Averages nearly 1 point higher; sales 825,780 shares.
- June 11—Weekly steel production $\frac{1}{2}$ -point higher at 100 per cent of capacity.
- June 14—President Roosevelt orders immediate freezing of U. S. assets of Germany and Italy and all invaded or occupied European countries.
- June 15—Italy freezes U. S. funds in that country in reprisal.
- June 16—U. S. orders all German consulates in this country closed by July 10. All passengers and crew of German-torpedoed ship, *Robin Moor*, reported safe.
- June 17—Stocks resume upward trend. Averages gain $\frac{1}{2}$ point; sales 403,880 shares.
- June 18—Rumors of invasion of Russia by Germany, notwithstanding

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- "non-aggression pact" between them in August, 1939; Turks sign 10-year treaty with Germany. Stock averages $\frac{3}{4}$ point higher; sales 576,240 shares. Weekly steel production unchanged at 100% of capacity.
- June 19—Germany and Italy request U. S. to close its consulates in Axis-dominated countries by July 15, N. Y. City seeks 64,000 volunteers to form civilian defense system. Stock averages fractionally lower.
- June 20—In message to Congress, Pres. Roosevelt brands Germany as "international outlaw," and declares U. S. expects Germany to make full reparation for sinking of *Robin Moor*. Henry Ford signs contract with C. I. O. granting all demands. Stock averages $\frac{5}{8}$ point lower.
- June 22—Germany invades Russia without declaration of war or denunciation of "non-aggression" treaty of 1939. Churchill, in broadcast, calls Germany the real enemy and promises aid to all who fight Hitler, including Russia.
- June 24—Pres. Roosevelt pledges all possible aid to Russia. Repeated heavy bombing of industrial Germany causes losses of 5 to 22 points in German bonds. Weekly steel production, by *Iron Age* estimate, rises above 100% of capacity to 100 $\frac{1}{2}$ % for first time this year.
- June 25—Finnish cities bombed. Turkey declares neutrality. Russian and Nazi official war reports conflict entirely.
- July 2—N. Y. stock averages $\frac{1}{2}$ point higher; sales 394,540. Weekly steel production declines to 93 $\frac{1}{2}$ % of capacity in holiday week, against 100 $\frac{1}{2}$ %.
- July 7—U. S. Marines occupy Iceland on invitation from that country. U. S. Navy to assure safe communications between Iceland and the U. S. N. Y. stock market strong, closing at highest levels since January in fourth largest session of year. July wheat 1 $\frac{3}{8}$ ¢ higher at \$1.05 $\frac{5}{8}$, against 78¢ in February.
- July 8—N. Y. stock market extends gains in heaviest trading since Nov. 12; transactions 1,387,673 shares. Averages $\frac{7}{8}$ point higher. Wheat reaches season's high levels at \$1.07 $\frac{3}{4}$ ¢.
- July 9—Russians say German drives are turned back; German communiqués reticent. French ask armistice in Syria. Trading on N. Y. Stock Exchange again passes million-share mark; averages virtually unchanged. Weekly steel production 5 points higher at 98 $\frac{1}{2}$ ¢.
- July 12—Cotton crosses 14¢ a pound for first time since April, 1937. Sold at 8.82¢ in Aug., 1939, and 10.45¢ in Jan., 1941.
- July 16—Heavy fighting in Russia; market weakens. Tokyo Ministry resigns; difference of judgment reported. As result of shut-down on Great Lakes, national rate of steel production falls 1 $\frac{1}{2}$ points to 97. Pittsburgh and Chicago districts, however, operated at 100 per cent.
- July 19—New pro-Axis Ministry appointed at Tokyo. Spot cotton at New York, 16.97¢ per pound, highest since April, 1930.
- July 23—Heavy selling of cotton on report that government may sell cotton from loan holdings in view of high price. Spot price declines from 17.21 to 17.01¢; futures 16.76 to 16.34. Stocks decline fractionally on vague rumors Japan may advance in East Indies. Stock transactions only half previous day. Steel output up to 99 $\frac{1}{2}$ per cent; Chicago district 101.
- Aug. 1—Price control bill sent to Congress; sets July 29 as agricultural base, when cotton at 17.64¢ was at price not reached since January, 1929. Japanese agents announce Tokyo bonds will continue to pay interest. Spot cotton rises from 16.75¢ to 16.88.
- Aug. 2—Wheat rises 2¢ a bushel to \$1.06 $\frac{5}{8}$ for September, "four-year high"; cotton to 17.60¢, on talk in Congress of "floor" for minimum agricultural prices. Cotton market figures 110% of "parity," as prescribed in price curb bill, would be equivalent to 18.38¢ for cotton.
- Aug. 4—H. R. votes tax bill. September wheat rises 3 $\frac{1}{2}$ ¢ per bushel

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- to \$1.09½; cotton declines to 17.47¢.
- Aug. 5—House and Senate conference committee announced as supporting unanimously plan to "freeze" government's holdings of 170,000,000 bushels wheat and 6,000,000 bales cotton. Proposal opposed by Sec. Morgenthau as "wicked." Wheat and cotton prices lose ground slightly. Henderson repeats warning of inflation. Railway managers reject workers' demand for 30% increase in earnings of five brotherhoods and increase of 30¢ an hour and upward by fourteen other unions. Chairman of managers' negotiating committee estimates total cost at \$900,000,000. Railway workers call for strike vote under Labor Act. Steel output ½% higher at 99½% of capacity.
- Aug. 7—Senate votes, 45 to 30, for extension of draft to 2½ years. Wheat and cotton down fractionally.
- Aug. 8—Wheat down 1½¢ to \$1.11½, recovers 1½. Spot cotton declines from 17.30¢ to 17.21.
- Aug. 9—Wheat declines 1¾¢ to \$1.10½, recovers ¾¢. Spot cotton down to 16.97.
- Aug. 11—Dispatches report Russian city of Smolensk in ruins. Third successive day of declines in stocks. Wheat down 1½¢ to \$1.10½. Cotton 16.76, against 17.91 on July 26.
- Aug. 12—Stocks decline for fourth successive day; averages lowest since July 7. Wheat down ⅞ point to \$1.09¾. Spot cotton weak at 16.35 cents, lowest since July 14. Had risen to 17.91 July 26.
- Aug. 13—House passes by 173 to 123 bill "freezing" government's holdings of wheat and cotton, passed by Senate Aug. 6. Veto by President predicted. Further penetration by Nazi troops in Russia. Intensive aerial bombing of Berlin by British fliers. Wheat recovers 2¢; spot cotton recovers from 16.35 to 16.91. Because of scrap shortage, week's steel output declines to 98½% of capacity, from 99½.
- Aug. 14—After several days of rumor and official silence, announcement made midocan meeting Roosevelt and Churchill, with military aides, and joint adoption 8-point declaration regarding post-war purposes.
- Aug. 15—Grain operators estimate 110 per cent of parity may work out price of \$1.40 Sept. wheat.
- Aug. 20—Report that President had signed bill "freezing" government-owned wheat and cotton causes advance of spot cotton from 16.80 cents to 17.16; of September wheat from \$1.11½ to \$1.13½. Reported Russians had blown up large dam on Dnieper. Steel output higher at 99½%.
- Aug. 21—Cotton falls sharply to 16.94¢; wheat down 1¢ to \$1.12¼. Iron and Steel Institute reports as of June 30 increase of nearly 2,000,000 tons in steel capacity during half-year, reducing ratio of output to capacity by 2½ per cent from ratio based on Dec. 31 capacity.
- Aug. 27—September wheat rises to \$1.14½, highest since August, 1937; spot cotton to 17.44¢, highest since January, 1930. Steel production unchanged at 97 per cent, new capacity figure; equivalent to 99½, old capacity.
- Sept. 3—September wheat \$1.14¾, year's high record to date. Spot cotton 17.91 cents; same as July 26, which was highest since 1929. Had declined to 16.35 Aug. 12. Despite Labor Day holiday Sept. 1 steel output for week declined only ½ point to 96½ per cent of capacity.
- Sept. 4—U. S. S. Destroyer *Greer*, bound for Iceland, attacked by submarine but not hit. September wheat rises to \$1.18, spot cotton to 18.01 cents.
- Sept. 6—Spot cotton 18.16 cents at week-end.
- Sept. 7—U. S. freighter *Steel Seafarer* sunk in Red Sea by German airplane.
- Sept. 8—British seize Spitzbergen, burn coal reserves, previously used by Germans. September wheat \$1.19½; spot cotton 18.40 cents.
- Sept. 9—September wheat rises to \$1.20½; spot cotton to 18.61 cents. Secretary Morgenthau, in speech at Boston on prospect of inflation, de-

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- nounces bidding up fantastically wheat, cotton and other farm products, when reserve stocks held by government, especially of wheat and cotton, are above last year and ought to be released for consumption.
- Sept. 10—September wheat breaks 3 cents from previous day's close to \$1.17 on Morgenthau's overnight speech; spot cotton from 18.61 cents to 18.26. Wheat recovers later to \$1.18 $\frac{1}{4}$, cotton futures close at lowest. Norway put under martial law by Nazis. Steel output rises from 96 $\frac{1}{2}$ per cent to 97 $\frac{1}{2}$.
- Sept. 11—President Roosevelt, in radio address, announces that Navy has been ordered to destroy on sight any German or Italian submarines entering waters "the protection of which is necessary for American defense." September wheat recovers to \$1.20 $\frac{5}{8}$, spot cotton to 18.54 cents.
- Sept. 13—September wheat loses 1 $\frac{3}{8}$ ¢ but closes at \$1.18 $\frac{5}{8}$.
- Sept. 16—September wheat fractionally lower at \$1.18 $\frac{1}{4}$. Spot cotton declines 15 points to 18.26. Weekly steel output $\frac{1}{2}$ point lower at 97 per cent of capacity. Norwegian and Danish bonds 4 $\frac{1}{2}$ to 6 $\frac{1}{2}$ points higher.
- Sept. 17—Senate passes tax bill and sends it to President.
- Sept. 18—President asks \$5,985,000,000 more for lease-lend aid to June 30, 1943. Government seizes three strike-bound freighters in New Jersey. Stocks fractionally lower. Wheat 1 $\frac{3}{8}$ ¢ higher at \$1.19. Cotton 11 points lower at 18.24.
- Sept. 22—United States government-owned ship, carrying flag of Panama, sunk off Iceland.
- Sept. 23—Federal Reserve Board decides to increase reserve requirements to present statutory limits, or by about one-seventh, on Nov. 1. December wheat higher at \$1.20 $\frac{1}{2}$. Cotton at 17.39.
- Sept. 24—Sec. Morgenthau recommends 100% tax on all corporate gains over 6%. Stocks weakened 1 to 2 points, but averages closed fractionally higher. Wheat \$1.21 $\frac{1}{8}$
- Spot cotton 17.54. Weekly steel production unchanged at 97% of capacity.
- Sept. 25—Stocks at N. Y. lose as much as 5 points on news that Treasury is already at work on a bill to limit corporate profits to 6%. Sales 1,169,090, third largest day of the year. Stock averages decline 1 $\frac{3}{4}$ points, then recover $\frac{5}{8}$.
- Sept. 30—Weekly steel production 1 $\frac{1}{2}$ points higher at 98 $\frac{1}{2}$ % of capacity.
- Oct. 1—Spot cotton 43 points higher at 17.91.
- Oct. 4—Trading in railway and shipping bonds on Stock Exchange heaviest for a Saturday since Sept. 9, 1939. Wheat \$1.20 $\frac{3}{8}$. Cotton 28 points higher at 18.02.
- Oct. 6—Wheat \$1.21 $\frac{1}{2}$, $\frac{1}{4}$ ¢ higher. Cotton 16 points lower at 17.86.
- Oct. 8—Nazis claim to be within 125 miles of Moscow and say Russian armies face "inexorable annihilation." Stock averages, $\frac{1}{4}$ point lower, touch lowest level since June 21; sales 444,140 shares. Cotton loses 29 points on government's crop estimate. Weekly steel production $\frac{1}{2}$ point lower at 98 per cent of capacity.
- Oct. 10—House passes second six billion lease-lend bill, 328 to 67. Spot cotton 17 points higher at 17.54.
- Oct. 14—Stocks fractionally lower on continued bad news from Russia.
- Oct. 15—OPM orders January automobile output reduced by "at least 51%." Stock averages lost $\frac{3}{4}$ point; sales, 483,400. Dec. wheat 2¢ lower at \$1.17 5-7. Soy beans lose 5 $\frac{1}{2}$ ¢. Spot cotton 30 points lower at 17.29. Weekly steel production 97.5% of capacity, a decrease of $\frac{1}{2}$ point.
- Oct. 16—Japanese Cabinet of Prince Konoye resigns. Germans capture Odessa and are reported closer to Moscow. Diplomatic corps leave Russian capital for a point farther east. N. Y. stock averages 1 $\frac{1}{2}$ points lower; sales, 841,360. Wide breaks in all commodities. Dec. wheat 10 $\frac{1}{8}$ ¢ lower at \$1.05 $\frac{1}{2}$. Soy beans lose 8¢, corn 7 $\frac{3}{4}$ ¢. Spot cotton 70 points lower at 16.59.

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- Oct. 17—U. S. Destroyer *Kearny* torpedoed off Iceland. After establishing new lows for current movement, N. Y. stock market recovers, averages gaining $\frac{1}{4}$ point; sales, 670,010 shares. Dec. wheat \$1.10 $\frac{3}{4}$, 5 $\frac{1}{4}$ ¢ higher. Soy beans recover 6 $\frac{1}{4}$ ¢. Spot cotton 36 points higher at 16.95.
- Oct. 18—General Tojo appointed Premier of Japan. Believed to have formed Cabinet hostile to U. S.
- Oct. 20—Dec. wheat 1 $\frac{5}{8}$ ¢ lower at \$1.12 $\frac{1}{8}$. Spot cotton declines 29 points to 16.78.
- Oct. 22—White House endorses movement in Congress to repeal Neutrality Act. Russians report German drive on Moscow halted. Dec. wheat 1 $\frac{3}{8}$ ¢ lower at \$1.15 $\frac{1}{8}$. Weekly steel production 96.5% of capacity against 97.5.
- Oct. 23—Spot cotton 31 points lower at 17.35.
- Oct. 24—Spot cotton 17.21.
- Oct. 25—John L. Lewis calls strike in "captive" coal mines of the seven largest steel companies in defiance of President Roosevelt. Dec. wheat 1 $\frac{3}{8}$ ¢ lower at \$1.15 $\frac{1}{8}$. Spot cotton 17.06.
- Oct. 27—President Roosevelt asks Lewis for third time to call off the strike in coal mines because of defense emergency; Lewis refuses. Stock averages lose $\frac{3}{4}$ point; sales 478,800. Dec. wheat \$1.13 $\frac{1}{2}$, 1 $\frac{7}{8}$ ¢ lower. Spot cotton 23 points lower at 16.83.
- Oct. 29—Dec. wheat 1 $\frac{3}{8}$ ¢ higher at \$1.14 $\frac{5}{8}$. Spot cotton 17.05, 12 points higher. *Iron Age* on Wednesday reports steel plant operations 94 $\frac{1}{2}$ % as compared with 96 $\frac{1}{2}$ in previous week, wholly because of coal strike uncertainties; but estimate revised to 97 at week's close.
- Oct. 30—John L. Lewis calls off strike in captive coal mines until Nov. 15. The Government's Mediation Board undertook to report, in the meantime, on merits of controversy; companies accepted mediation, but Lewis was assumed to mean that unless union demands were satisfied by the decision, strike would be resumed on Nov. 15.
- Oct. 31—Stocks break as much as 3 points on announcement of torpedoing and sinking of destroyer *Reuben James* west of Iceland.
- Nov. 4—U. S. Navy tanker *Salinas* torpedoed without warning southwest of Iceland, but no casualties occurred. Weekly steel production 98% of capacity, 1 point higher than last week's revised figure.
- Nov. 6—Pres. Roosevelt pledged \$1,000,000,000 in lease-lend aid to Russia. Weekly statement by Federal Reserve of member bank excess reserves shows decrease, through increased reserve requirements as of Nov. 1, amounting to \$1,190,000,000. Board's statutory limit of doubling reserve requirements exhausted. Rejection of Fact-Finding Board's recommendations by railway union heads, and Treasury's proposed super-tax bill cause setback on Stock Exchange. Averages lose 1 $\frac{1}{4}$ points; sales 673,940 shares. Dec. wheat \$1.16, 1¢ lower. Cotton 2 points higher.
- Nov. 7—Senate votes, 50 to 37, to amend Neutrality Act to permit arming of U. S. merchant ships and their passage through combat zones into belligerent ports. Railway strike called by Brotherhoods for Dec. 5. Stock market continues weak. Averages lose $\frac{3}{8}$ point; sales 701,370 shares. Dec. wheat gains 1¢; spot cotton 16 points higher, at 17.20.
- Nov. 10—Churchill tells Tokyo that Britain would declare war on Japan "within the hour" should war break out between U. S. and Japan. National Mediation Board rejects demands of United Mine Workers in the "captive mines" for a closed shop by vote of 9 to 2. Stock averages continue decline, losing $\frac{1}{2}$ point; sales 627,100.
- Nov. 12—Stocks on N. Y. Exchange touch lowest levels since June, 1940; sales 1,017,630 shares. Averages lose 1 $\frac{1}{8}$ points. Weekly steel production $\frac{1}{2}$ point lower at 97 $\frac{1}{2}$ per cent of capacity.
- Nov. 13—House passes bill to amend Neutrality Act, 212 to 194. Stocks

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- recover part of previous day's losses; averages $\frac{1}{2}$ point higher. Sales 830,880. Wheat gains $\frac{3}{4}\phi$; spot cotton 3 points higher.
- Nov. 14—Roosevelt tells United Mine Workers that neither the government nor Congress will force a closed shop. Stock averages recover $\frac{1}{2}$ point; sales 840,342 shares. Wheat gains $\frac{3}{4}\phi$; spot cotton 5 points lower.
- Nov. 16—Officials of United Mine Workers Union order 53,000 men in captive mines to strike at midnight and threatens to call out 400,000 more members in all bituminous coal mines. U. S. cruiser captures German freighter sailing under U. S. flag.
- Nov. 17—Pres. Roosevelt and Sec. of State Hull receive special Japanese envoys, Saburo Kurusu and Admiral Nomura, for conference on the Far Eastern situation. Spot cotton 13 points lower.
- Nov. 19—British commence surprise offensive in Libya. Pres. Roosevelt appeals to steel companies and union heads to submit their differences on the union shop to arbitration or to postpone the issue until the end of the national emergency; steel companies agree, but John L. Lewis rejects proposals. Stocks advance for first time in five consecutive sessions, averages gaining almost $\frac{1}{2}$ point; sales 800,960 shares.
- Nov. 20—Thanksgiving. Gen. Maxime Weygand ousted from post in North Africa.
- Nov. 21—Negotiations between State Dept. and Japanese envoys toward an adjustment in Japanese-American relations run into difficulties. British gain in Libya. Germans reported demanding bases in North Africa from French. Transactions on Stock Exchange 853,840 shares. Spot cotton 5 points lower at 17.20.
- Nov. 22—John L. Lewis unexpectedly accepts proposal of President Roosevelt for arbitration of the union shop issue and calls off coal strike.
- Nov. 24—Negotiations between management and railroad labor in an effort to avert strike scheduled for Dec. 7 collapse. Both sides will report to Pres. Roosevelt and request assistance. U. S. troops occupy Dutch Guiana.
- Nov. 25—President asks fact-finding board to renew hearings on dispute between the railroads and the unions because of new facts which have developed since the board's recent decision and in the hope of averting strike.
- Nov. 26—Steel production $95\frac{1}{2}\%$ of capacity, $1\frac{1}{2}$ points below revised figure of week ago. Decline due to strike in captive mines and scrap shortage.
- Nov. 28—Stocks break through previous lows to lowest levels since outbreak of war. Stock averages decline for fourth successive session, losing $\frac{3}{4}$ point; sales 868,160 shares. Japanese bonds lose $1\frac{7}{8}$ to 6 points.
- Dec. 1—Threatened nation-wide railway strike averted by compromise on wages, operating employees to receive increase of $9\frac{1}{2}\phi$ an hour, non-operating employees 10¢. Estimated \$300,000,000 added to pay-rolls. Japanese Cabinet, in extraordinary session, decides to continue Washington conversations.
- Dec. 3—House passes drastic defense anti-strike bill, 252 to 136. Lease-lend aid extended to Turkey. Stocks gain $1\frac{1}{8}$ points; sales 1,090,790 shares. Dec. wheat $1\frac{1}{2}\phi$ higher; spot cotton gains 30 points. Weekly steel production $1\frac{1}{2}$ points above week ago at 97% of capacity.
- Dec. 4—Russians reported gaining along entire battlefield. Profit-taking sends N. Y. stocks fractionally lower; sales 1,126,966.
- Dec. 7—Japan declares war on U. S. and Britain after surprise bombing of Pearl Harbor Naval base at Hawaii and while discussions were still in progress between Sec. Hull and Japanese peace envoys. Day's news (Sunday) confused, but made it clear that U. S. had lost 6 vessels, only one however being a battleship. Further particulars lacking, except that loss of life was considerable. Sec. Hull accuses Japan of making a treacherous and unpro-

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- voked attack upon U. S., and terms Japan's conduct during recent negotiations in Washington as "infamously false and fraudulent." John L. Lewis wins decision in union-shop dispute of captive coal mines.
- Dec. 8—U. S. formally declares war on Japan, with only one dissenting vote. Britain, China, Netherlands East Indies and 7 Latin-American countries also declare war on Japan. Because of freezing weather, Germans abandon Moscow campaign temporarily. Stocks at N. Y. lose 1 to 5 points, but recover about a point.
- Dec. 9—Pres. Roosevelt calls upon the people to prepare for long war and acknowledges serious reverses during Japanese attack on Pearl Harbor. Air raid warnings in N. Y. cause decline in stocks of from 2 to 8 points; sales largest since May 21, 1940 at 2,555,200 shares.
- Dec. 10—First army communiqués say situation in Philippines "in hand." Japanese sink two British capital ships, *Prince of Wales* and *Repulse*, off Malaya. Stocks at N. Y. improve, but averages gain only $\frac{1}{4}$ point; sales 2,088,320. Dec. wheat $\frac{1}{2}\text{¢}$ higher; spot cotton loses 24 points.
- Dec. 11—Germany and Italy declare war on U. S., and Congress quickly follows with unanimous declaration of war on them, and without debate passes bill permitting use of U. S. forces anywhere in the world. U. S. sinks Japanese battleship, one destroyer and one cruiser and seriously damages another battleship. Trading in Axis securities suspended here. Stocks show gains of from 1 to 3 points. Averages $\frac{7}{8}$ point higher; sales 1,400,890. Dec. wheat gains $3\frac{1}{2}\text{¢}$; spot cotton 42 points higher at 18.03.
- Dec. 13—Japanese troops wiped out on Western coast of Luzon in Philippines.
- Dec. 14—Russians report Germans retreating in disorder. Japanese begin siege of Hong Kong after British refuse to surrender.
- Dec. 15—Stock averages at best levels of current recovery; sales 1,110,340 shares.
- Dec. 16—Both houses of Congress pass bills to revive war authority granted to Pres. Wilson in 1917.
- Dec. 17—Commanders of Navy, Army and Air Forces in Pacific relieved of their commands and new officers appointed. Stocks close up to 4 points. Averages $1\frac{5}{8}$ points lower; sales 1,223,500. Wheat losses $1\frac{3}{8}\text{¢}$ on announcement of government's willingness to sell 170,000,000 bushels of its holdings. Spot cotton 17.13, 12 points lower. Weekly steel production unchanged at $97\frac{1}{2}\%$ of capacity.
- Dec. 18—N. Y. stocks touch new low levels since June, 1938. Combined averages $\frac{3}{4}$ point lower, industrials losing $1\frac{1}{2}$ points; sales 1,313,400.
- Dec. 21—Hitler removes Field Marshal Walter von Brauchitsch as Commander in Chief of the German Army and assumes personal direction of all military operations.
- Dec. 23—President accepts industry-labor conference's decision against strikes and lockouts and the settlement of all disputes by peaceful means, but ignores question of closed shop, on which no agreement could be reached. War Labor Board to be set up to handle disputes. Japanese land forty more transports in Philippines in addition to the eighty reported landed yesterday. Stock averages touch lowest levels since March, 1938, but close unchanged for the day; sales 1,417,422. Weekly steel production $93\frac{1}{2}\%$ per cent, a decline of 4 points.
- Dec. 25—British garrison at Hong Kong surrenders to Japanese after sixteen-day siege. British take Benghazi, thereby bringing all Cyrenaica under British control. Manila declared open city.
- Dec. 26—Winston Churchill gets ovation as he addresses United States Congress.
- Dec. 27—Japanese bomb undefended city of Manila. Russians continue advance. Trading on Stock Exchange largest Saturday of year; sales 1,162,110. Averages gain $\frac{3}{8}$ point.

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- Dec. 29—Steel production 96½%. Transactions on Stock Exchange 2,925,455 shares; averages little changed.
- Dec. 30—Japanese gaining in Philipines. N. Y. stocks gain 1 to 5 points in widest recovery since Nov. 1940; sales 2,558,507.
- Dec. 31—Probable fall of Manila and selling for income tax purposes send New York stock averages ½ point lower; sales, 1,753,353.

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DIVISION XI

AGRICULTURE AND ALLIED INDUSTRIES

CONDITIONS IN AGRICULTURE

BY ARTHUR P. CHEW

OFFICE OF INFORMATION, DEPARTMENT OF AGRICULTURE

GENERAL

Farmers in 1941 geared their industry for defense production and opened up the throttle for three main objectives: (1) to supply the largest home demand in our history; (2) to provide meat, eggs, butter, cheese, and certain fruits and vegetables for Great Britain; and (3) to build food reserves for use in world rehabilitation after Hitler has been defeated. Simultaneously farmers held down their production of crops that are on hand already in sufficient quantities, such as wheat, cotton, and tobacco.

Farm prices rose, also farm income, not as a result mainly of farm policy as such, but rather as a consequence of the defense program which tremendously increased the buying power of consumers and brought the government into the market for agricultural commodities needed in our own defense activities and for export under the lend-lease act. As a check upon inflation the farmers with Federal guidance prepared a record food-production program for 1942, with especially high goals for milk, cheese, poultry, eggs, and meats. The goals called for increased marketings rather than for increased numbers of dairy cattle and more vegetable gardens.

There is every prospect that the demand for farm products will continue to increase. The level of business activity and of consumer incomes is rising; government purchases of farm products have by no means reached their peak; shipping difficulties reduce

the competition of imported goods; the rising general price level fosters a strong speculative and storage demand; and the collaboration of the American Navy with the British improves the outlook for lend-lease exports.

Agriculture runs some risks in the food-for-freedom drive. Farmers do not forget what followed the crop expansion during the first World War, and dread a similar aftermath again. Most of them realize, however, that under-production is a greater danger just now than over-production, since under-production might imperil the nation and lose the war. Abundant production now is actually a safeguard against a possible surplus problem later, because it is a means of promoting a favorable peace. On the other hand, letting Hitler win would mean good-bye to profitable farm exports and perhaps also to Federal farm benefits and would write tribute in the record instead—tribute to a foreign power.

In the last ten years farmers have developed a program based on the idea, which Congress and the people have endorsed, that what is truly good for agriculture is good also for the nation. Now the farmers turn the rule about. They acknowledge that what is truly good for the nation is likewise good for the agricultural industry, and can not basically conflict with agricultural interests. In short, they take a national as well as an occupational view of what affects their

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interests and fully recognize the supreme importance of the defense program.

FARM PRICES AND THE CONSUMER

Rising prices brought charges that the farmers were profiteering. There was no ground for the charges. True, the 1941 farm price average rose to a point much above the pre-war level. It advanced more than the non-farm average. Prices at retail were catching up and consumers were beginning to grumble. But the pre-war farm price average was low—around 23 per cent below the parity level. In September, 1941 it was five points above parity, the level toward which agricultural policy had been working. The crops that were above parity, however, were mostly not the so-called basic crops, on which the farm program had centered its action, but chiefly non-basic crops, the defense demand for which was rising steadily. Among the basic crops only cotton and tobacco were above parity. Commodity loans supported basic crop prices only up to 85 per cent of parity. Parity incomes from such crops required supplemental parity and conservation payments.

Farm products that were well above parity in September were chiefly the commodities in increased demand for defense reasons, such as beef cattle, hogs, chickens, veal calves, lambs, and butterfat. They were relatively high from the influence of the defense program rather than of the agricultural program. The defense program substituted boom for depression, raised the national income to almost \$90,000,000,000 as compared with \$75,000,000,000 in 1940, provided approximately full employment at higher wage rates, and made a heavy governmental draft on the food supply. It boosted the demand powerfully and irresistibly. Under the Steagall amendment to an act that extended the life of the Commodity Credit Corporation, Congress directed the Secretary of Agriculture to offer prices at not less than 85 per cent of parity for non-basic crops whenever for de-

fense reasons he decides that the production of such crops should be increased. But this was defense policy rather than farm policy as such. Moderately higher prices for these crops now may prevent runaway prices later.

Official agencies have not encouraged farmers to raise their price demands above parity. Secretary Wickard warned them that such a policy would endanger the parity principle itself. He thinks it undesirable to change a disparity against agriculture to one in its favor, and urges adherence to the principle of equality. True, he has approved the general price-control bill, with its provision that ceilings shall not be established on farm commodities at prices below 110 per cent of parity, but this is to allow for inevitable price fluctuations. Ceilings exactly at parity would establish an average at some lower point. The Secretary has opposed a bill to authorize commodity loan rates at parity, in the belief that such a plan would be generally undesirable and would have an especially bad effect on the program to convert corn into foodstuffs. War-time policy for agriculture ranks production above prices, though it includes price incentives to produce necessary supplies. As part of this encouragement, it offers continued support to farm prices to the extent that available funds permit, in any tapering-off process that may be necessary when the emergency is over.

FARM RESPONSE TO EMERGENCY

It has not been easy for farmers to grasp the change that the war produces in farm requirements. Two years ago, when the war began, they saw little need to expand their output. This country had on hand tremendous surpluses of wheat, corn, cotton, and tobacco, with small prospect that export outlets would be available. There were few apparent shortages of any farm products. The first year of the war reduced our farm exports heavily. Suddenly the outlook changed. Germany swept over Scandinavia, The

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Netherlands, Belgium, and France, and obliged Great Britain to get more of its food supply from trans-oceanic sources. Our defense program boosted food consumption in the United States. Then came the lend-lease act which may provide Great Britain with nearly 8 per cent of our total farm production. There is always a lag, however, between events and opinion. Many agricultural officials, with exact and copious information close at hand, could not switch their thinking overnight from peace-time to war-time farm requirements, and farmers had far greater difficulty. The fact that in many crops the barriers were down and that the need for continued restraints in the production of other crops was important chiefly as a means of aiding the shift to defense production, came to their knowledge only slowly. Nevertheless, by the end of 1941, they were fully mobilized in an all-out food-for-freedom drive.

Officials in the U. S. Department of Agriculture saw what was coming and prepared to meet it. More than a year before, they urged farmers to expand their hog production. This was contrary to the farmers' plans. Farmers reported hog-breeding intentions that indicated the spring pig crop of 1941 might be as much as 14 per cent smaller than 1940, though the 1940 crop was relatively small. The Department, in a statement issued on Dec. 26, 1940, advised farmers to increase their hog production well above the indicated level, so that the 1941 spring pig crop would at least not be smaller than that of the previous year. This was a surprising recommendation, for the farm price of hogs was then only about \$6 a 100 pounds. Nevertheless, the farmers acted on it and raised a spring pig crop about equal to that of 1940, and laid plans for a big increase in fall farrowing. As evidence that the policy was sound, it may be noted that the farm price of hogs in September 1941 averaged \$11.10 a 100 pounds. There was early recognition that dairy production would need to be heavily increased, and the Department advised farmers to this effect in a general way

before the lend-lease requirements became known.

LEASE-LEND FARM EXPORTS

Under the lend-lease act our farm exports, which had been running far below the pre-war level, increased substantially. Up to Oct. 1 nearly 1,650,000,000 pounds of agricultural commodities had been delivered to representatives of the British Government for shipment under the provisions of the lend-lease act. The total cost of the commodities was nearly \$200,000,000. Animal protein products made up the most important groups of commodities in the shipments. These included cheese, dried milk, evaporated milk, eggs, pork and lard. Other commodities made available to the British included fruits and vegetables, grain and cereal products, fats and oils, other foodstuffs, and non-foodstuffs such as cotton, tobacco, and naval stores. Most of the food supplies are distributed to the civilian population in England through normal trade channels under a rationing system and with strict price controls. Some of the supplies are distributed through canteens in industrial plants; some are used for free distribution through mobile soup kitchens in bombed areas, and to children and others through schools, clinics, and hospitals.

The \$7,000,000,000 lend-lease appropriation included \$1,350,000,000 earmarked for "agricultural and other commodities." Additional lend-lease legislation (Public Law 282—77th Cong. approved Oct. 28, 1941) appropriated \$1,875,000,000 more for the same purpose. In 1942 Great Britain's requirements, along with other foreign demand, will call for the exportation from the United States of about twice the volume of farm production exported in 1941, though as compared with normal exports the volume will still be low. Altogether total farm exports in 1942 may require the output of 25,000,000 to 27,000,000 acres of crop land, much of it in crops which ordinarily are not exported in large amounts. The rich concentrated foods such as meat, eggs, and cheese, which pack much nourishment in little space,

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are in especially strong demand for lease-lend export.

In anticipation of export needs, the Surplus Marketing Administration made large scale purchases of foodstuffs even before actual requisitions under the lend-lease authority had been issued. Had this not been done, the flush production of dairy products and eggs would have moved into storage at the usual seasonally low price level. The benefits from a market strengthened by later lend-lease purchases would have accrued to the handlers and speculators. The procedure gave farmers a direct incentive to plan for increases in production at a time when they could plan effectively. The improvement in prices that resulted from immediate buying went to farmers and not speculators, and it added hundreds of millions of dollars to the total farm income.

With the purchase program under way, it was possible to meet lease-lend requests for many foodstuffs from supplies already bought. Advance buying had provided supplies of concentrated foods such as pork, evaporated milk, cheese, eggs, and other nutritively rich products, for which an export demand had been expected. The British Government's food mission facilitated planning of the buying operations. It helped the Surplus Marketing Administration anticipate food needs for shipment abroad and consequently to make the purchases in a more orderly fashion than would otherwise have been possible.

PROCEDURE IN FOOD CAMPAIGN

As part of the food-for-freedom drive, the Department on April 3, 1941 announced a plan to support the prices of dairy products, hogs, chickens, and eggs up to June 30, 1943, and to cushion the possible shocks of the post-defense period. It sought to establish price differentials that would favor the desired balance among dairy products. Later, on the authority of the Steagall amendment to the act that extended the life of the Commodity Credit Corporation, the Department stated it would endeavor to

support the prices of hogs, eggs, evaporated milk, dry skim milk, cheese, and chickens up to Dec. 31, 1942, at not less than 85 per cent of parity to the extent that the funds available allowed.

In the fall months it worked out production goals for 1942, got the help of state agencies in breaking down the goals to a state and county basis, and launched a farmer-pledge campaign. The goals took account of the expected demand at home and abroad, the need for machinery, fertilizer, insecticides, container materials, storage, and agricultural labor, the seasonal and biological problems involved in rapid crop expansion, the availability of necessary credit, the nutrition standards considered desirable for the United States, and the need to divert excess staple export acres to other uses. Next came the task of getting the goals translated into action, farm by farm, throughout the country. It called for the active cooperation of state agencies and of individual farmers.

Such a program would have been impossible had agriculture entered the war period unorganized and not able to coordinate its activities. Fortunately, it had available the AAA system, with its nation-wide farmer-committee setup, which facilitated a selective rather than a blind or blanket response to the needs of the emergency. Agriculture had facilities, in other words, for boosting production in a good crop balance, with defense requirements emphasized and non-defense requirements scaled. There is no need for more wheat, cotton, or tobacco, yet war-time price advances affect these crops to some extent along with the crops that may run short. Country-wide adjustments give more of what is needed and less of what is not needed, and tend with other features of the agricultural program to equalize farm returns by crops and regions so that farmers whose task is crop control will have the same incentive to do it as will those whose job is crop expansion. Small need exists to develop new crop land or to establish new farms. Rightly man-

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aged, the farms can produce what is wanted, through increases in the output per animal and per acre. But the problem of management is collective as well as individual, and calls for farm team-work throughout the land.

STOCKPILES FOR POST-WAR USE

It has not been possible as yet to accumulate food stockpiles for post-war use. The defense demand is too exacting. Nevertheless, the Department ranks this objective high in the production goals. In wheat, cotton, and tobacco there are extra stockpiles already; but there is needed also stocks of finished foods like canned pork, canned vegetables, dried eggs, and evaporated milk. Such things will keep. They are needed to make sure that our own people will have plenty, to provide food for the people of England, China, and other countries actively resisting aggression, and to give the starving conquered peoples of Europe something to depend on when the fighting stops. Secretary Wickard has expressed the opinion that continuation of our exports to Europe, even on a gift basis after the war, would be a worthwhile investment if it helped to stabilize the world. Such a policy would be practicable, of course, only with Hitler eliminated. In a Hitler-dominated world there would be no safe outlet anywhere for United States products. Every pound of cotton and every bushel of wheat that left our shores would be likely to return transformed into bombs and guns. But the whole national policy assumes the defeat of Hitler, the agricultural features of it along with all the rest.

FARM EARNINGS AND INCOME PROSPECTS

In earnings, the position of the farmers improved greatly in 1941. Cash farm income from marketings and government payments was nearly \$11,000,000,000, as compared with slightly more than \$9,000,000,000 in 1940 and less than \$5,000,000,000 in 1932. It is expected that the corresponding total in 1942 will approach

\$13,000,000,000. This would be the highest total since 1920. Farm prices in 1941 averaged nearly 25 per cent above 1940, and the forecast is for a gain of about the same proportion in 1942. In the first part of 1941, however, farm prices were much below present levels. It will take a rise in 1942 of only about 10 per cent above the September, 1941 average to realize the above forecast. The production of many agricultural commodities in 1941 was the largest on record, and the total output was 2 per cent higher than in 1940 and 12 per cent above the 1924-29 average. Though the production-goals for 1942 call for large increases in the production of some crops, the aggregate increase desired is only 2 per cent above the 1941 total. Hence the outlook for increased farm returns in 1942 rests largely on the expectation of higher average prices, with increased production of livestock and livestock products contributing. Government payments to farmers in 1941 were somewhat below the 1940 total of \$766,000,000.

THE YEAR'S CROP PRODUCTION

The year was outstandingly favorable and crop production was somewhat above the previous year's abundant outturn. Only 1937 exceeded 1941. Both food and feed crops were well above average.

The wheat crop approached 1,000,000,000 bushels for the third time in history; yields of both winter and spring wheat were unusually high. The cotton crop, however, was unusually small, largely because of greatly reduced acreage; the yield per acre was 12 per cent above average. Tobacco production was less than in most recent years.

The wheat crop of 957,563,000 bushels (Sept. 1 estimate) was second only to the 1,008,637,000-bushel crop of 1915. The average production of recent years has been 747,507,000 bushels. The bumper crop resulted from unusually high yields in all wheat-producing areas, particularly in the main spring wheat states. Acreage was only slightly above average.

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The corn crop of 2,523,964,000 bushels was 9 per cent above the 10-year (1930-39) average of 2,307,452,000 bushels. A further increase took place in the acreage planted to corn hybrids and, in the face of distinctly adverse weather during mid-July and early August, yield per acre was almost six bushels above average.

The 1941 oats crop of 1,129,757,000 bushels was 12 per cent above average, but it was smaller by 106,000,000 bushels than the 1940 large crop.

Feed grain production was above average though below prospective feeding requirements. Some further utilization of the large stocks accumulated in recent years will undoubtedly occur. The hay crop was the largest since 1927; if the winter is normal it will be sufficient to feed the increased livestock population at about the usual rate without drawing on reserves.

The crops of barley, rice, grain sorghums, dry beans, dry peas, soybeans, and total commercial vegetables exceeded production in any previous season. The flaxseed crop was larger than in any year except 1902. The peanut crop was second to the record crop of 1940, and production of corn, oats, rye, sugar cane, and sugar beets was well above average. Production of potatoes and sweet potatoes barely exceeded the average. Fruit production was close to previous high records.

The cotton crop on Oct. 1 was indicated at 11,061,000 bales. This was 12 per cent less than 1940 and 17 per cent less than average. The crop was particularly poor in the eastern and central parts of the belt from South Carolina to Louisiana. For all cotton states the indicated yield averaged 234.2 pounds per acre, which was considerably less than the 252.5 pounds harvested in 1940, but well above the 10-year average of 205.4 pounds per acre.

The total harvested acreage of crops for the second successive year shows a slight increase. Of important crops there were 325,224,000 acres for harvest in 1941. Of these same crops, 320,288,000 acres were harvested in

1940, and the 10-year (1930-39) average acreage was 328,379,000.

LIVESTOCK AND DAIRY PRODUCTS

The upswing in total livestock numbers, which started in 1938 and continued during 1939, tended to level off during 1940, and the number of animal units on farms at the beginning of 1941 was only a little larger than a year earlier. The declining trend in hog production was checked in the spring. With a spring pig crop practically the same as in the preceding year, combined with a sharp increase in fall farrowings, the total pig crop of 1941 is indicated at about 5 per cent more than in 1940. The 1941 lamb crop set a new high record. The number of cattle on farms Jan. 1 was much above the number a year earlier and pointed to increased cattle production. Enough more pullets were kept from the 1941 record hatchings to increase farm flocks for next year's laying season by as much as 8 per cent.

Milk production during the first eight months of 1941 totaled 81,600,000,000 pounds, about 5 per cent above that in the same period of 1940. With favorable fall pastures, a heavy milk flow was in prospect for the remaining months of the year and a production of nearly 117,000,000,000 pounds seemed probable for 1941. This would be 6,000,000,000 pounds more than in any previous year. Most of the increase in milk production was absorbed in the heavy production of manufactured dairy products. From May 1 through August, the production of American cheese exceeded the record production in the same months of the year before over 38,000,000 pounds, or 14.5 per cent. Evaporated milk production increased 20 per cent. Creamery butter production increased nearly 50,000,000 pounds, or 6.6 per cent. The increased butter production went into cold storage.

INTER-NATION COMMODITY AGREEMENTS

Problems of surpluses caused by blockades have led to the negotiation

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of international sugar and coffee agreements. Longer-time considerations have entered into renewed discussions of the World Wheat Agreement. Objectives have been broadened to include matters not heretofore considered. The first chief purpose was the disposal of surpluses; now many more things are found necessary. Among them are means of correcting the surplus problem at its source, through the stabilization of production internationally. The International Wheat Agreement, prepared by representatives of the United States, the United Kingdom, Argentina, Canada, and Australia, at Washington in July, 1941, represents the most recent stage in such negotiations. It goes further toward an international agricultural adjustment program than anything that has preceded it.

The agreement declares that international cooperation is indispensable to the full development of the resources of the world; that a reserve stock or over-normal granary should be created to protect consumers; that production must be regulated to demand; that prices should be stabilized at a level in proper relation to other prices and at the same time fair to consumers and producers; that the wheat-producing countries should agree to share the world's markets in periods of surplus; that importing countries should agree to cease the stimulation of uneconomic, high-cost production; and finally, that a stock of relief wheat should be made up by direct contributions by the member governments. For the operation of the purposes of the understanding, an International Wheat Council is to be set up with full powers to adjust prices, quotas, and shipments to changing conditions.

There is a provision that importing countries shall act as semi-enforcement agencies. Previous international wheat agreements have not contained this feature. No agreement can be beneficial unless it is fully observed by all of the principal producing countries involved. Such schemes have usually failed in the past because they have lacked flexibility and could not

meet unforeseen circumstances. Participation of importing countries in the enforcement operations should help to correct this drawback. In administrative flexibility the new agreement embodies great improvements. In fact, it represents an ideal which may not be as fully reached with other commodities.

The need of an international agreement with regard to the production and marketing of cotton is generally recognized. Governments of most cotton-producing nations have expressed their willingness to continue the discussion of the matter. Several international cotton conferences held in 1939, 1940, and 1941 failed to result in any definite agreement; yet the exchange of views indicated that progress was being made. Cotton presents an unusual complexity of problems. The number of producing countries, the variety of conditions in these countries, the use of artificial substitutes for cotton in consuming countries, and the recent expansion of cotton production in new areas make a set of formidable obstacles. Production costs and prices vary widely in the cotton-producing countries. Since cotton is not a food but a raw material and moves into international trade a second time as cloth, it encounters added difficulty in matters of trade balances and exchange. The belief is growing, however, that an international cotton agreement can be reached.

POST-WAR PLANNING IN AGRICULTURE

The Department of Agriculture visualizes a post-war world in which full use of our manpower and our material resources will be made for the benefit of the whole people. It believes that, with wise and courageous action, it will be possible to reach and maintain a national income greater than ever before. The cooperation of leaders of agriculture and of farmers generally will be important in making that ideal a reality. All agencies of the Federal Government have begun to prepare plans and

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programs for post-war action to maintain high levels of production and employment after defense is over. The Secretary of Agriculture has appointed an inter-bureau committee to carry on agriculture's share of the work, in cooperation with other public and private agencies.

The National Resources Planning Board has the responsibility of centralizing the post-defense planning. By Executive Order it is gathering, analyzing, and collating all plans for post-defense activities both public and private that have to do with natural and human resources. Its primary function is to gather ideas and plans, to stimulate appropriate independent action by other public and private agencies, to bring together individuals who are interested in harmonizing their views, and to furnish information on these matters to the President and the Congress. It hopes in this way to systematize and give a collective general sense to the post-defense planning of individuals and of Federal, state, and local agencies.

The Department of Agriculture's

part in post-defense planning involves three different lines of inquiry: (1) Keeping in touch with developments that affect the economy as a whole; (2) the development of rural works programs in the capital improvements field; and (3) the development of publicly sponsored programs of rural welfare. Obviously, the first of these three categories is major. The National Resources Planning Board envisages a post-defense program of full employment with the national income maintained at not less than \$100,000,000,000 a year. Attainment of it will require industry and government to work together. Shifting industry from a war-time to a peacetime basis is essentially a problem in developing sources of consumer buying power to take the place of defense expenditures. Related problems include the development of new uses for defense plants and the establishment of new factories for new products. Without success in this general phase of the post-war job, progress will be difficult in the agricultural phases.

COTTON AND GRAIN CROPS

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COTTON CONDITIONS AND PRODUCTION

Production of cotton in 1941 was featured by a further reduction in acreage and by the continued high level of yield per acre. The 1941 cotton crop of 10,976,000 bales of 500 pounds gross weight was 13 per cent less than the 1940 crop, and 17 per cent smaller than the average (average acreage, yield, and production relate to the 10 years, 1930-1939, inclusive) crop of 13,246,000 bales. Continued low prices for cotton at planting time and continued allotments under the AAA Conservation Program reduced the acreage to the lowest in this century. Growing conditions were favorable in the Mississippi River

Delta and in western Oklahoma and Texas, but were unfavorable in the southeastern states during much of the 1941 season. The yield for the United States was the fifth highest of record, with relatively high yields in many states more than offsetting low yields in some of the southeastern states.

There was some delay in planting, particularly in Texas and Oklahoma, due to frequent and heavy rains through the spring. Boll weevils multiplied rapidly because of frequent showers during the early summer, and on Aug. 1 the infestation was the heaviest since 1932. The most serious infestation was in central South Carolina and Georgia. Boll weevil damage mounted during the month of

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August as a result of continued showery weather in the area from Georgia to Arkansas and eastern Texas. In the western parts of Oklahoma and Texas, rainfall was beneficial during August while, in Virginia and North Carolina, high temperatures held the boll weevil in check.

During September, dry weather brought about improvement in the crop in the states adjoining the Mississippi River and in Alabama. High temperatures checked weevil activities and favored rapid development of cotton. In Oklahoma there was moderate rainfall which was beneficial but, in Louisiana and Texas, excessive rainfall caused deterioration except in the northwestern part of the latter state.

During October, boll weevils caused further damage in Mississippi, Louisiana, and Arkansas. Moderate rainfall and above-normal temperatures in North Carolina, Tennessee, and Missouri, however, speeded the harvest and increased prospective production. In South Carolina, Louisiana, and to a considerable extent in Georgia and eastern Texas, the crop had been damaged beyond recovery. The crop matured earlier than usual from Mississippi eastward. In Texas, Oklahoma, and the western states, the crop was later than usual, but weather during the late fall permitted harvesting under favorable conditions.

Texas, as usual, ranked first in the production of cotton, followed in order by Arkansas, Mississippi, Alabama, and Oklahoma. Production was much above average in Missouri, Tennessee, Arizona, and California. The crop was especially short in South Carolina, Georgia, and Louisiana.

COTTON YIELDS

The 1941 yield per acre of 235.4 pounds for the United States was the fifth highest of record. It was exceeded by the yield in each of the four preceding years. The level of yields during the past five years has been above the level of earlier years, partly because of the favorable season in most states and partly as the result of the use of better lands, increased fertilization, and more intensive cultivation,

which have accompanied the greatly reduced acreages of these years. New high record yields in 1941 were recorded in Missouri and Tennessee. Oklahoma had the highest yield of recent years. The yield in Alabama was average. Yields were very low in South Carolina, Georgia, Louisiana, and Florida. In Arizona, the yield was slightly below average. In the other states, the yields were above average, with high yields in northwest Texas more than offsetting the low yields in the central and eastern parts of that state.

COTTON ACREAGE

The acreage of cotton in cultivation on July 1, 1941 of 23,250,000 acres was 7 per cent less than in 1940 and 30 per cent below average. Total plantings of cotton were well below the Agricultural Conservation Program allotments. A contributing factor in reducing acreage was the supplementary cotton program in which farmers were given cotton stamps in return for making additional acreage reductions. There was some failure to plant intended acreage because of the interference by rainfall, and there was some early abandonment of acreage. Some farmers, whose plantings were in excess of allotments, removed the excess acreage before harvest. The abandonment of acreage in 1941 was 3.8 per cent, which is about double the abandonment from natural causes.

In 1941, 22,376,000 acres were harvested, 6 per cent less than the 23,861,000 acres harvested in 1940 and nearly 30 per cent below average. Included in the state totals shown in the accompanying table are 62,000 bales of American Egyptian cotton produced on 136,000 acres, mostly in Arizona, and 2,800 bales of Sea Island cotton produced on 40,000 acres, mostly in Georgia and Florida. The 1940 production of American Egyptian cotton was 33,000 bales on 69,000 acres, and production of Sea Island cotton amounted to 4,000 bales on 31,000 acres.

VALUE OF PRODUCTION

As the result of increased prices for both lint and seed in 1941, cotton

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COTTON ACREAGE AND PRODUCTION

State	Acreage in Cultivation on July 1 (1000 Acres)			Yield per Harvested Acre (Pounds)			Production 1000 Bales (500 lb. gross wt.)		
	1930-39 Average	1940	1941	1930-39 Average	1940	1941	1930-39 Average	1940	1941
Missouri	401	414	416	362	454	570	292	388	490
Virginia	62	33	37	260	270	373	33	25	28
N. Carolina . . .	1,088	841	813	286	427	335	629	739	556
S. Carolina . . .	1,552	1,268	1,233	265	375	165	824	966	405
Georgia	2,551	1,981	1,874	221	250	164	1,132	1,010	624
Florida	107	68	67	146	154	125	32	21	17
Tennessee	918	729	710	257	340	411	465	509	600
Alabama	2,671	2,037	1,800	216	190	216	1,145	779	790
Mississippi	3,289	2,658	2,459	246	240	287	1,585	1,250	1,420
Arkansas	2,790	2,161	2,097	236	349	343	1,281	1,501	1,445
Louisiana	1,504	1,199	1,087	237	194	147	703	456	315
Oklahoma	2,856	1,900	1,731	136	211	217	750	802	750
Texas	12,542	8,873	8,180	154	184	169	3,766	3,234	2,745
New Mexico	116	110	117	440	576	483	100	128	115
Arizona	187	221	253	401	424	389	159	195	203
California	294	356	355	538	749	609	333	545	446
Ill., Ky., Kan.	24	22	21	320	394	635	16	18	27
United States . .	32,952	24,871	23,250	205.4	252.5	235.4	13,246	12,566	10,976

again became a \$1,000,000,000 crop. Based on production and prices paid to producers to Dec. 1, the total value of cotton lint and cottonseed was \$1,128,161,000, compared with \$742,958,000 in 1940. Of the 1941 value, \$893,159,000 relates to the lint and \$235,002,000 relates to the seed. Although practically all the lint is sold, a portion of the cottonseed is retained on the farm for seed, feed, and fertilizer. The preliminary average price to Dec. 1 of cotton lint for the 1941 crop was 16.10 cents per pound, compared with the season average price of 9.89 cents per pound for the 1940 crop. The preliminary price per ton of cottonseed to Dec. 1, 1941 was \$48.04, as compared with the season average price of \$21.73 for the 1940 crop. Included in the value of cotton lint was the value of the cotton which was placed on loan and which was unredeemed at the end of the year. For the 1940 crop, 3,180,000 bales were placed on loan but by Aug. 1, 1941 all but 96,000 bales had been redeemed. Loans on the 1941 cotton crop to the end of December were made on 1,700,000 bales. The values do not include Agricultural Conservation Program payments nor parity price payments.

GRAIN CROPS

Total production of grain in 1941 was larger than in any previous season since 1920. Record crops of barley and grain sorghums were produced. The corn crop was the largest since 1932, and the wheat crop was the largest ever produced in the United States with the exception of the big crops of 1915 and 1919. Rice production was near a record. In the case of barley, rice, oats, and grain sorghums, both acreage and yield per acre were high. The large wheat crop was grown on a smaller than average acreage with high yields; the corn crop was grown on substantially reduced acreage with an exceptionally high yield. The total production of grain crops used primarily for human food—wheat, rye, buckwheat and rice—was 1,051,000,000 bushels, 15 per cent more than in 1940 and 25 per cent above average.

WHEAT

The 1941 wheat crop of 945,937,000 bushels was the largest since 1919. The crop was favored by ample moisture for seeding winter wheat in most of the important wheat areas and by the rare occurrence in the same year of nearly optimum weather every-

COTTON AND GRAIN CROPS

GRAIN PRODUCTION—UNITED STATES

Crop	Acreage Planted (1000 Acres)			Yield per Harvested Acre (Bushels)			Production 1000 Bushels		
	1930-39 Average	1940	1941	1930-39 Average	1940	1941	1930-39 Average	1940	1941
Wheat:									
Winter	48,057	43,216	45,663	14.4	16.5	17.0	569,417	588,802	671,293
Durum	3,418	3,370	2,597	9.3	11.1	16.4	27,598	33,479	41,800
Other Spring	18,344	14,878	14,144	10.7	13.4	16.9	150,492	190,093	232,844
All	69,819	61,464	62,404	13.3	15.3	16.9	747,507	812,374	945,937
Rye	6,163 ¹	5,541	6,182	11.2	12.8	12.9	38,472	41,149	45,191
Rice	943	1,090	1,257	48.4	50.9	43.4	45,673	54,433	54,028
Buckwheat	460 ²	389	339	16.0	16.7	17.9	7,315	6,493	6,070
Corn, All	101,081	88,563	87,164	23.5	28.4	31.0	2,307,452	2,460,624	2,672,541
Oats	39,196	37,002	39,363	27.3	35.2	31.0	1,007,141	1,246,050	1,176,107
Barley	12,713	15,057	15,080	20.6	23.0	25.5	224,970	310,108	358,709
Grain Sorghums	8,674	11,331	9,937	11.0	12.4	17.3	84,253	127,894	153,968

¹ Short-time average.

² Harvested acreage.

where for growing and maturing both winter and spring wheat. The crop was much more than the 670,000,000 bushels needed for domestic consumption, and there will be a material increase in the carry-over of wheat into the new season. The acreage harvested (55,831,000 acres) was 5 per cent more than that of 1940 and just about equal to the average of 55,884,000 acres. The total acreage sown, including some duplication of spring wheat sown on abandoned winter wheat acreage, was 62,404,000 acres, not much different from the acreage sown for harvest in 1940 and about 11 per cent less than the average seeded acreage of 69,819,000 acres. The total acreage seeded was only slightly more than the Agricultural Conservation Program allotments which totaled 62,000,000 acres both for the 1940 and 1941 crop.

Although only from 70 to 85 per cent of the wheat crop is sold off farms, the valuation of production at the sale price gives a measure of the importance of this crop to the agricultural industry. Computed at the preliminary season average price of 95.6 cents per bushel, the 1941 crop would be valued at \$904,008,000. These figures are materially higher than those for the 1940 crop, when the season average price was 68.2 cents and the value, \$554,168,000. The prices include allowances for loan wheat at

average loan values. At the end of December, 344,000,000 bushels of the 1941 crop were under loan; of the 1940 crop, 278,000,000 bushels were placed under loan, but practically all of this had been redeemed by the end of the crop marketing season.

WINTER WHEAT

Winter wheat was seeded on 45,663,000 acres in the fall of 1940, compared with 43,216,000 acres in the preceding fall. There was heavy winter loss in the Missouri River states which were hit by a freeze on Armistice Day, but in the other important producing states, winter damage was light. Abandonment was approximately 13.4 per cent compared with the average of 19.2 per cent. The harvested acreage amounted to 39,547,000 acres, just slightly above average. The harvested yield of 17 bushels per acre was well above average in spite of the fact that much mature grain was lost in Texas and Oklahoma by excessive rains that delayed harvest. Although there was apprehension that the heavy plant growth and ample moisture would bring about development of rust, there was no widespread infestation, and damage from that cause was relatively unimportant. The production of 671,293,000 bushels was not a record crop but it was considerably above average.

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SPRING WHEAT

The production of all spring wheat of 274,644,000 bushels was the highest since 1928. The large crop was the result of exceedingly high yields which were records in some states and which were due to ample moisture during the spring and summer over most of the spring wheat belt. Acreage seeded was considerably below 1940, partly because ample fall moisture permitted full realization of winter wheat seeding intentions in the northwestern states. Even with very low abandonment, the harvested acreage of 16,284,000 acres was below that of the preceding year and below the average of 16,742,000 acres.

Production of durum wheat in the three states for which separate estimates are made (Minnesota, North Dakota, South Dakota) was 41,800,000 bushels, which is far above average and a fourth larger than in 1940. High yields account for the large crop, since the 2,546,000 acres harvested was a relatively low acreage. The yield of 16.4 bushels was five bushels per acre higher than in 1940 and seven bushels higher than average.

The 1941 production of 232,844,000 bushels of spring wheat other than durum was a fourth larger than the 1940 crop and well above the 150,000,000-bushel average. The acreage harvested (13,738,000 acres) was less than in 1940 and less than average. A new high record yield of 16.9 bushels per acre was harvested. In the entire spring wheat belt the rainfall throughout the growing season was favorable for promoting maximum growth. There was some reduction in yield and some damage to the quality of grain because of the continuation of the rains through the harvest season.

RYE

The 1941 production of rye (45,191,000 bushels) was 10 per cent larger than in 1940 and 17 per cent above average. The acreage sown to rye for all purposes in the fall of 1940 was 6,182,000 acres, which was just above average sowings. Much of the rye sown is used as pasture and cover crops. The favorable soil moisture sit-

uation enabled farmers, especially in the Great Plains and Rocky Mountain area, to sow all the intended acreage. Growing conditions in the spring were generally favorable, and the yield of 12.9 bushels per acre was well above average. The acreage of rye harvested as grain (3,498,000 acres) was 5 per cent above average. The preliminary season average price of 53.1 cents per bushel applied to the production gives a value of \$23,978,000 in comparison with the value of \$17,101,000 in 1940 when the season average price was 41.6 cents per bushel.

BUCKWHEAT

Production of buckwheat continued on a relatively low level in comparison with earlier years. The 1941 crop of 6,070,000 bushels was only 83 per cent of average. Only 339,000 acres were harvested in comparison with the average of 460,000 acres. At the preliminary season average price of 64.8 cents per bushel, the buckwheat crop had a value of \$3,931,000. In 1940, at the season average price of 53.8 cents per bushel, the crop was valued at \$3,495,000.

RICE

A near record acreage of 1,257,000 acres of rice was sown in 1941, and the acreage harvested was 16 per cent larger than in 1940. For the second successive year the crop suffered from storm damage. The Gulf hurricane in September struck the coastal counties of Texas and swerved into Louisiana, moving later into Arkansas. Great damage was done to the Texas crop, but the Louisiana and Arkansas crops were not severely damaged. Weather, after the storm, continued unfavorable, with intermittent rain for many days hindering and delaying the progress of the crop. Some of the Texas crop had not been harvested by Dec. 1. The California crop was planted late, and the summer was unfavorable for proper growth and filling of the heads. With a United States yield of only 43.4 bushels, compared with the 1940 yield of 50.9 bushels and a 10-year average of 48.4 bushels, the production was only 54,028,000 bush-

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els. Although this was above average, it was a relatively low production in view of the very large acreage harvested. Both domestic and export demand for rice have been relatively high. The preliminary season average price of 118.5 cents applied to the production gives a value of \$63,997,000. In 1940 the season average price was 81.2 cents and the value of the crop, \$44,208,000.

FEED GRAINS

The combined production in 1941 of the four feed grains—corn, oats, barley, and grain sorghums—(expressed in tons to allow for different weights per bushel) totaled 106,569,000 tons, 7 per cent more than the 99,858,000 tons produced in 1940. The average production of 88,481,000 tons is for a 10-year period which includes the two severe drought years of 1934 and 1936. The 1941 production, however, was larger even than the pre-drought (1923-32) average production of 101,000,000 tons. In that earlier period also the corn acreage had not been limited by allotments under the Agricultural Conservation Program. The oats crop was slightly smaller than in 1940, but above average. The other three feed grains were well above average, with grain sorghums an all-time record. The greater part of the production of these crops is fed on farms, with only a relatively small quantity moving into commercial channels. Farmers' incomes from these crops, therefore, come largely from the livestock to which these crops are fed. There were record stocks of these grains on hand at the beginning of the year but, with considerable increases in the numbers of grain-consuming animals and poultry and with heavy feeding stimulated by increased prices for livestock products, the utilization of feed grains will be heavy and the reserves of corn and oats will probably be reduced.

CORN

In 1941, production of corn was the highest in nine years. The estimated production for all purposes was 2,672,541,000 bushels which was 9 per

cent more than in 1940 and 16 per cent above average. These estimates include the grain equivalent of corn used for silage, forage, hogging off, and pasturing, in addition to the corn husked and picked for grain. The total acres harvested (86,089,000 acres) was the smallest since 1894. The harvested acreage in 1940 was 86,738,000, and the 10-year average 98,049,000 acres. A slight decrease in the acreage planted in 1941 was made in spite of the fact that corn acreage allotments in the commercial corn area were slightly increased. The 1941 corn crop developed under favorable conditions. Plantings were early in most states. Warm dry weather in late June followed an earlier period of wet weather and clean fields were made possible by the increased use of mechanized equipment. Pollination was largely completed before the drought and heat wave developed in late July and early August. This drought was broken by rains and moderating temperatures in mid-August in most states. The large acreage of hybrid corn, which in 1941 was 62 per cent of the Corn Belt's total, withstood the drought and heat remarkably well. Ample moisture and warm weather during September enabled the crop to mature with practically no frost damage. The close of the season was relatively unfavorable with heavy rains in October and November which made the fields so soft as to hamper husking operations and which kept the moisture content of the corn high. There was more weather damage to forage and to grain in the standing shock than usual. The 1941 yield per acre of 31 bushels, nevertheless, was the second highest of record. It was exceeded only by the 1906 yield of 31.7 bushels.

The production of corn for grain in 1941 was 2,429,054,000 bushels. In 1940, 2,209,583,000 bushels were harvested as grain, and the 10-year average is 2,007,881,000 bushels. Corn silage was produced on 4,083,000 acres in 1941, distinctly less than the 10-year average of 5,202,000 acres. Acreage harvested for forage, hogging off, and pasturing was 3,975,000 acres com-

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pared with 5,271,000 acres in 1940. This was considerably less than the average of 10,787,000 acres. The 10-year average, however, contains the three drought years of 1930, 1934, and 1936, when grain production on many fields was negligible or so small that grazing was the only practical method of harvesting.

A measure of the importance of corn in the agricultural industry may be gained by calculating the value of the entire production at the price received for the corn which is sold. On this basis the value of production of the 1941 crop was \$1,894,841,000, at a price of 70.9 cents per bushel. In 1940 the season average price was 61.8 cents per bushel, and the computed value was \$1,520,723,000. The price of corn is affected materially by the loans under the Agricultural Conservation Program made to cooperators who seal part of their production in cribs on their farms. Of the 1940 crop, 103,000,000 bushels were placed under loan. Up to Dec. 31, 1941 only a small quantity had been placed under loan, but many farmers undoubtedly will seal part of their crop during the early months of 1942.

OATS

The production of oats in 1941 (1,176,107,000 bushels) was 6 per cent less than in 1940 and 17 per cent above average. Since the acreage harvested in 1941 was larger than in the preceding year in nearly all the important producing states, the decline in production was due to much lower yields per acre, particularly in the Corn Belt states. The acreage harvested for grain of 37,972,000 acres was the largest since 1935 and 7 per cent above 1940. In every year some of the acreage of oats is harvested for hay and some acreage is entirely abandoned. The 1941 acreage losses were heavy in the south central states but lighter in the other areas. As a whole, the crop matured early before the damage from widespread disease and hot, dry weather resulted. Rust and hot weather did reduce yields in the west north central states. Wet weather also interfered with threshing, especially in

North Dakota and Minnesota. The yield per acre of 31 bushels was much below the 35.2 bushel yield of 1940, but that was an extremely favorable season. At the preliminary price for the season of 38.7 cents per bushel, the oats crop was valued at \$455,610,000. The 1940 crop at 30.3 cents per bushel was valued at \$377,171,000.

BARLEY

Production of barley reached a new record in 1941. The crop of 358,790,000 bushels was the result of increased acreage harvested and better than average yields. It exceeded the 1940 crop by 16 per cent and exceeded the average by 59 per cent. The acreage harvested (14,049,000 acres) was 4 per cent above the previous record acreage of 13,526,000 acres in 1929. The yield of 25.5 bushels per acre was the highest since 1928 and 24 per cent above average. The barley crop matured under favorable conditions. Yield was equal to or above that of 1940 in many states and well above the 1940 yield in the Great Plains states where much of the crop is produced. The value of the 1941 barley crop at the preliminary season average price of 49.4 cents per bushel was \$177,070,000. The 1940 crop, computed at the season average price of 39.7 cents, had a value of \$122,974,000.

GRAIN SORGHUMS

Production of grain sorghums for all purposes in 1941 was the largest crop ever produced. It was one-fifth larger than the 1940 crop and nearly twice as large as average. The bumper crop resulted from a large acreage, the third largest of record, and a good yield, the highest in 13 years. The 1941 grain sorghum acreage was 14 per cent below the record high 1940 acreage, principally because there was less abandonment of winter wheat in the principal sorghum producing states of Texas, Kansas, Oklahoma, Colorado, and Nebraska. Sorghum is customarily planted on abandoned winter wheat land as a catch crop. Except for difficulties in obtaining good stands because of heavy rains at planting time, the entire

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growing season was favorable for the crop. Rainfall was ample, and the first killing frosts were late enough to permit sorghums to mature. There was, however, widespread deterioration of the crop after maturity because of excess rainfall at that time.

In 1941, a total of 107,782,000 bushels was harvested for grain compared with 80,363,000 bushels in 1940. Most

of the grain sorghum crop is fed to livestock, much of it in the same locality where it is produced. The measure of its importance, however, is indicated by the value of production of \$84,510,000 in 1941 and \$61,879,000 in 1940. The preliminary season average price of 54.9 cents in 1941 was somewhat above the season average price of 48.4 cents for the 1940 crop.

THE DAIRY INDUSTRY

By RICHARD J. FOOTE

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DAIRY PRODUCTS IN LEASE-LEND PROGRAM

The lease-lend program was the most important new factor for the dairy industry in 1941. Hitherto, the principal manufactured dairy product was butter, and most of the attention of the industry was centered on butter. Now, although butter still utilizes far more milk than any other manufactured product, the attention of the industry is centered on American cheese, evaporated milk, and dry skim milk, the dairy products which are desired in largest quantities under the food-for-defense program.

On April 29 the Department of Agriculture announced that "prospective export needs for dairy products, particularly cheese, evaporated milk, and dried milk, plus increasing consumer demands for dairy products in this country, make it desirable that milk production in the United States be increased 6 to 8 per cent." On June 4 the following statement was issued: "The total production of American cheddar cheese in the last 12 months was about 605,000,000 pounds and the total production of evaporated milk was 58,000,000 cases. On the basis of anticipated requirements, cheese production should be increased about one-third and evaporated milk production about one-fourth. It now appears that there will be an outlet at favorable prices for all the cheese and evaporated milk that can be produced during the next

12 months." On March 15 the Department began the purchase of relatively large quantities of a number of foods to be used "for direct distribution through state welfare departments to public-aid families and for use in free school lunches; to meet requests from the Red Cross for shipment to war refugee areas; or for sale to Britain under the provisions of the Lease-Lend Act." Dairy products formed a significant part of these purchases.

PRICE INCREASES

The seasonally corrected index of wholesale prices of manufactured dairy products (1910-14 = 100) increased gradually from 78 in March 1939 to 99 in March 1941. However, with the announcement of the food-for-defense program, the index increased to 110 in April and to 121 in May. During the next three months prices increased only slightly more than the usual seasonal amount, the index rising to 124 in August, but since that time prices have failed to rise as much as usual, so that by October the index fell to 116.

Prices of all manufactured dairy products rose contra-seasonally from March to June. In that month wholesale butter and American cheese prices were the highest since 1929, and evaporated milk prices were the highest since 1930. However, as there was no special demand for butter under the lease-lend program, butter prices in November were only a half cent

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higher than in June, whereas in 1940 they were 6 cents higher. Cheese and evaporated milk prices continued to advance, but only by about the usual seasonal amount.

The seasonally adjusted index of prices received by farmers for all milk and dairy products increased from 116 in March to 132 in June and 144 in November. In the latter month prices were the highest since 1929.

RECORD MILK PRODUCTION

Since the droughts of 1934 and 1936, the general trend in production of milk has been upward. Milk production on farms in 1941 was about 116,-500,000,000 pounds, compared with 111,100,000,000 pounds in 1940 and a 1935-39 average of 104,700,000,000 pounds, and was the largest on record. Milk production per cow also was by far the largest on record, increasing 3 per cent from 1940 to 1941. As a result of the high prices for dairy products, farmers fed considerably larger quantities of concentrates than in 1940.

The number of milk cows on farms has been increasing since 1937 and on Jan. 1, 1941 was 2 per cent larger than a year earlier. By the end of 1941 there were about 26,700,000 cows on farms, the largest since 1934, the peak year on record. The number of dairy heifers one to two years old on hand is sufficient to bring about further increases in 1942.

MILK AS A SOURCE OF FARM INCOME

Farm income from the sale of dairy products has been increasing since 1939 and in 1941 was 20 per cent larger than in 1940. As has been true in every year since 1919, dairy products were the largest single source of income, making up 17 per cent of the cash farm income from the sale of all crops and livestock combined. The \$1,830,000,000 income from milk in 1941 compares with \$1,750,000,000 from cattle and calves, \$1,250,000,000 from hogs, \$1,100,000,000 from cotton and cottonseed, and \$680,000,000 from wheat. Part of the income from the

sale of cattle and calves was from dairy stock. In addition to the cash income received by farmers from the sale of dairy products, it is estimated that the milk, cream, and butter consumed on farms had a value of about \$460,000,000. Thus, the gross farm income from dairy products in 1941 was \$2,290,000,000.

UTILIZATION OF MILK

The 118,500,000,000 pounds of milk produced in 1941 by cows on farms and those not on farms were utilized and finally consumed in a variety of ways. About 3,000,000,000 pounds were used on farms for feeding calves, and about 12,500,000,000 pounds were consumed as milk and cream by people living on farms. An additional 8,000,-000,000 pounds of milk were used for making farm butter. Thus, 23,500,000,-000 pounds of milk, about a fifth of the total production, were used on farms where produced and did not enter the channels of trade.

The urban population consumed as fresh milk and cream in 1941 the equivalent of 35,000,000,000 pounds of milk. Hence, consumption of milk and cream by people on farms plus the consumption in cities and villages required 47,500,000,000 pounds of milk or 40 per cent of total production.

Creamery butter utilized 38,000,000,-000 pounds of milk, and farm butter, 8,000,000,000 pounds. Thus, about as much milk was used for butter in 1941 as was consumed as fresh milk and cream. About 9,200,000,000 pounds of milk were used in cheese in 1941, 7,400,000,000 pounds in condensed and evaporated milk and 4,200,000,000 pounds for ice cream, leaving 2,700,-000,000 pounds for all other uses.

RECORD PRODUCTION OF MANUFACTURED DAIRY PRODUCTS

Total butter production in 1941 is estimated at 2,300,000,000 pounds, 2 per cent larger than in 1940. Production of American cheese was 720,000,-000 pounds, 20 per cent larger than in 1940, and evaporated milk production was 3,075,000,000 pounds, 25 per cent larger. Total dry skim milk produc-

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tion in 1941 was 475,000,000 pounds, only slightly larger than a year earlier, but production for human consumption was 385,000,000 pounds, 20 per cent larger than in 1940. Production of each of these products was the largest on record.

However, annual production data do not reflect the full effect of the food-for-defense program on the production of manufactured dairy products as the program did not get under way until about the middle of the year. During October 1941 production of American cheese was 30 per cent larger than in October 1940, evaporated milk production, 56 per cent larger, and dry skim milk production for human consumption, 20 per cent larger. Creamery butter production, on the other hand, was about the same as a year earlier.

FOOD-FOR-DEFENSE PURCHASES

From March 15 through November 29, the Department of Agriculture, under the food-for-defense program, purchased the following quantities of dairy products: 137,000,000 pounds of American cheese, 14,000,000 cases (609,000,000 pounds) of evaporated milk, and 32,000,000 pounds of dry skim milk. The largest purchases were made in October and November, but otherwise purchases were distributed with fair uniformity over the whole period.

EXPORT INCREASES

From May to September 1941 exports of cheese totaled 55,000,000 pounds, compared with less than 1,000,000 pounds in the corresponding period in 1940; exports of evaporated milk totaled 209,000,000 pounds, compared with 92,000,000 pounds a year earlier; and exports of dry skim milk totaled 15,000,000 pounds, compared with less than 2,000,000 pounds from May to September 1940. Exports of condensed milk and dry whole milk were also materially larger than a year earlier but butter exports were slightly smaller. The total milk equivalent of exports in these five months was 1,177,000,000 pounds, almost four times as large as in the corresponding

months of 1940. From January to April the milk equivalent of total exports was only about two and one-half times as large as a year earlier.

The only dairy products for which imports are important are cheese and casein. From January to September, imports of cheese totaled 16,500,000,000 pounds, compared with 26,200,000,000 pounds in the corresponding months of 1940 and 37,600,000,000 pounds in 1939. Imports of cheese fell off rapidly following the outbreak of war in Europe. Imports of casein, on the other hand, totaled 29,900,000,000 pounds from January to September, compared with 20,700,000,000 pounds a year earlier. Most of the casein imports are from Argentina.

CONSUMPTION INCREASE

Despite the large exports and relatively high prices, consumption of all milk in the United States in 1941 was the largest on record. Total consumption was 113,000,000,000 pounds, compared with 110,000,000,000 pounds in 1940 and a 1935-39 average of 105,000,000,000 pounds. Consumption per capita in 1941 was 855 pounds, also the highest on record. The consumption of fluid milk and cream in cities and villages in 1941 was almost 4 per cent larger than a year earlier.

Butter consumption in 1941 was about 1 per cent smaller than in 1940 but on a per capita basis was about equal to the 1935-39 average consumption. Cheese consumption in 1941 was 3 per cent larger than a year earlier; condensed and evaporated milk consumption, 14 per cent larger; and ice cream consumption, 15 per cent larger. The consumption of each of the three latter products, both total and per capita, was the largest on record.

GOVERNMENT PROGRAMS IN THE DOMESTIC MARKET

In addition to purchases of dairy products under the lend-lease program, the Government has given substantial aid to dairymen both through the regulatory programs, including market agreements and orders, and by its surplus removal operations.

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Federal marketing agreements were in effect in 28 large milk markets during at least part of 1941 and for the fiscal year ended June 30, 1941 producers sold a total of \$232,000,000 worth of milk under them. In addition, nation-wide programs were carried out to improve marketing conditions and to stabilize prices for evaporated milk and, until June 1, for dry skim milk. Besides the Federal marketing agreements, 20 states had laws providing for various types of milk control.

Under the Federal surplus removal program, about 6,500,000 pounds of butter were purchased for direct distribution to persons on relief and for use in school lunch programs. In addition, over 20,000,000 pounds of butter were purchased under the stamp plan. At the close of the 1940-41 school year approximately 800,000 needy children in eight cities were able to buy milk at a penny a glass. An additional 500,000 needy persons were able to buy milk at 5-6 cents per quart.

INSECT PESTS AND PLANT QUARANTINES

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FRUIT PESTS

Codling Moth.—During 1941 further confirmation was made of the effectiveness of finely divided phenothiazine in the control of codling moth. Xanthone has shown definite promise for codling moth control in the Northwest. In the Middle West, tank-mixed nicotine bentonite for the fourth consecutive year resulted in the production of more clean fruit than heavy lead arsenate-oil sprays.

Comstock's Mealybug.—In some orchards in West Virginia and Virginia this insect caused commercial injury to as much as 81 per cent of the fruit. Three species of Japanese parasites of this mealybug were widely colonized in 1940.

A New Scale Insect in Missouri.—This insect (*Parlatoria chinensis* (Marl.)) was first discovered in a limited area in St. Louis in 1940. Surveys are under way to develop accurate information with respect to the limits of the area involved.

Oriental Fruit Moth.—Methods are being developed for the production of large numbers of parasites for liberation very early in the season, and the results of experiments indicate that the parasite when so liberated is usually of considerable value.

Plum Curculio.—Favorable preliminary results in the control of this insect were obtained by treating the soil with dichloroethyl ether early in the summer.

Grape Berry Moth.—The use of calcium arsenate in two applications against the first brood of this moth followed by three applications of processed nicotine bentonite against the second brood gave favorable control.

California Red Scale.—Decidedly improved effectiveness of cyanide fumigation against this insect was obtained by the use of a blower to mix the gas with the air within the tent, and rapidly to produce a uniform concentration.

Japanese Beetle.—The main area of Japanese beetle infestation has continued to increase. Serious damage is now being done from the District of Columbia and adjoining sections of Maryland and Virginia to southern New England and New York, and in a few points in Ohio. Special emphasis is now being placed on work with milky disease that attacks the grubs of this beetle and offers decided promise in the control of the pest when cultured and distributed artificially.

Pear Psylla.—Intensive scouting

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reveals that the pear psylla distribution extends beyond the Spokane Valley in Washington State. The population has been materially reduced and no infestations were found in the important pear-producing areas of the Wenatchee or Yakima Valleys. Efforts have been made to prevent the establishment of this insect in commercial areas.

Mexican Fruitfly Control.—For the second consecutive year larval infestations of the Mexican fruitfly in Texas fruits were approximately 25 per cent of the maximum number formerly recorded. At no time during the harvest period did there develop a serious outbreak.

Phony Peach.—Phony peach disease survey showed that whereas this disease was once known to exist in 17 states, it has now apparently been eradicated from Indiana, Maryland, Oklahoma, and Pennsylvania, and greatly reduced in other states.

Peach Mosaic.—During the fiscal year 1941 no mosaic was found in 14 previously infected counties but was found in five counties from which the disease had not previously been reported. In addition, there was noted a material reduction in the incidence of the disease in many of the infected areas.

Citrus Canker.—The most outstanding event in the citrus canker eradication project during the year was the finding of this disease at Corpus Christi, Tex., involving 154 trees. These were the only infected trees found in the United States and were promptly destroyed.

TREES AND LUMBER

Termites.—Increased attention was given to cooperative work with the Army, Navy, and defense housing agencies in planning and constructing buildings that will be reasonably safe from infestation. One hundred and twenty-one defense housing projects were inspected during the early part of 1941.

Bark Beetles.—Research has developed a method of selective logging of trees susceptible to attack by bark beetles in northeastern California and

southeastern Oregon, thus permitting a fuller utilization of the available supply of mature ponderosa pine, badly needed in national defense programs.

White Pine Weevil.—Experimental work indicates that excellent control can be obtained by spraying the leaders of the trees in the fall with a concentrate containing 14 ounces of lead arsenate, $3\frac{1}{2}$ ounces of fish oil, and a gallon of water.

Gypsy Moth.—Defoliation was less extensive during the summer of 1940 than during the previous season. No defoliation was reported from any of the towns lying within the barrier zone. The use of the autogiro in spraying infested areas has been found effective.

White Pine Blister Rust.—Early in 1940 an act of Congress provided for carrying out blister rust control activities by cooperating agencies. This authorizes the use of Federal funds for blister rust control on state and private lands. During 1940 over 69,000,000 *Ribes* plants, which are the alternate host of this disease, were removed from nearly 2,000,000 acres of control area.

GRAIN

Corn Breeding to Resist Insect Attack.—Three varieties of dent corn were found to be especially promising. Further investigations are aimed at producing a corn resistant to both corn earworm and chinch bug.

European Corn Borer.—Significant increases in the abundance of this insect occurred in parts of Ohio, Indiana, New York, New Jersey, Maryland, Delaware, and Virginia. Eleven new counties were found to be infested in Illinois, four in Virginia, four in Wisconsin, and one each in Ohio and Maryland.

Grasshoppers.—In general the grasshopper situation was less critical than at any time during the last few years. The lesser migratory grasshoppers occurred in outbreak numbers in parts of the northern Great Plains. Areas of heavy infestation of very limited extent occurred in Arizona,

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Colorado, Kansas, Oklahoma, and Texas.

Mormon Crickets.—These insects in the region east of the Rocky Mountains were decidedly less destructive than in 1940. In limited sections of Idaho and Oregon and in a more extensive area in northern Nevada severe outbreaks occurred. The general adoption of sodium fluosilicate bait and the use of airplanes for spreading it permitted extensive and economical control.

White-Fringed Beetle.—As a result of a cooperative campaign there was a decided decrease in the intensity of infestation by this insect in the limited area known to be infested in the Gulf region. The replacement of dusts by adhesive sprays has increased the effectiveness of insecticidal control.

Legume Weevil.—This Mediterranean insect was first discovered in this country in 1939 in Arizona. It is apparently particularly adapted to the hot dry climate of our Southwest. Surveys, conducted in 1940 and 1941, disclosed that the distribution of the insect was apparently restricted to two small areas in Arizona, and adjacent California.

Stored-Grain Insects.—With a view to the present emergency increased attention was given to the preservation of stored grains from attack by insects. Fumigation with ethylene dichloride mixed with carbon tetrachloride and methyl bromide, together with the ventilation or turning of the grain gave practical control. Reinfestation of treated corn was effectively prevented by giving its surface a thin coat of a light, tasteless mineral oil. Where fumigation can be carried out under practically airtight conditions, methyl bromide was found highly effective in dosages as low as one pound to 1,000 cubic feet of space.

Wheat Resistant to Insect Attack.—Varieties of wheat have been developed showing resistance to hessian fly as high as 96 per cent. Efforts are being made to combine hessian fly resistance with resistance to stem rust.

Chinch Bug.—Despite heavy popu-

lations of chinch bugs in the fall of 1940, heavy rains at frequent intervals in June reduced them considerably. Nearly 286,000 gallons of creosote, however, were furnished Illinois, Indiana, Iowa, Kansas, Missouri, Nebraska, and Oklahoma by the U. S. Department of Agriculture in cooperation with these states for the use of farmers in preventing migration from small grain into corn.

Black Stem Rust of Wheat.—The program for removal of barberry bushes, which are the alternate host of this disease, has apparently resulted in cutting the average annual loss occasioned by this disease more than in half. During the fiscal year 1941 over 28,600,000 barberry bushes were destroyed.

SUGARCANE INSECTS

It has been discovered that one of the common leafhoppers is a carrier of a serious disease of sugarcane known as "chlorotic streak." Large-scale field tests have indicated that cryolite is effective in the control of the sugarcane borer. Burning the sugarcane trash during the fall and winter reduced populations from over 144 borers per acre to 9.6 per acre.

STORED-TOBACCO INSECTS

Due to the decline in exportation because of war conditions, the problem of storing tobacco has become acute. Special assignment of an entomologist has been made to advise in the selection of suitable storage houses from the viewpoint of insect control.

The use of a gas-proof curtain to seal the walls and sides of warehouses has proved highly effective in fumigating tobacco infested with cigarette beetle and tobacco moth with hydrocyanic acid gas. Cold storage control of tobacco in hogsheads has shown that flue-cured tobacco held at temperatures between 55 and 65 degrees F. gives excellent insect control.

VEGETABLES

Potato Aphids.—A spray consisting of derris, peanut oil, and insoluble copper, though not reducing the leaf

roll disease, increased potato yield in one instance 77 per cent in Maine.

Wireworms.—In the Pacific Northwest it has been found that 3- or 4-year successful croppings of alfalfa materially reduced the populations of wireworms for succeeding crops.

Beet Leafhopper.—In the spring of 1941 leafhopper populations were greater than at any time during recent years. Cool weather delayed these leafhoppers from entering the sugar beet fields, thus preventing much crop damage. A combination of pyrethrum and lime sulfur was found to be effective in protection of young plants from curly top infection.

Sweetpotato Weevil.—A campaign for the suppression of this insect has resulted in its eradication from 1,257 properties in the commercial sweetpotato growing areas in Georgia, Alabama, Mississippi, and Texas since 1937.

Mole Cricket.—Federal assistance was requested to combat a heavy infestation of mole crickets in 11 counties in Florida during the fall of 1940. One thousand two hundred and fifty-eight tons of poisoned bait, consisting of bran and calcium arsenate, were made available by the U. S. Bureau of Entomology and Plant Quarantine, in cooperation with the State of Florida, to the growers in these counties.

COTTON

Boll Weevil.—Populations were very high early in the spring of 1941. They continued to increase as the season advanced and very heavy damage occurred over a large part of the Cotton Belt.

Pink Bollworm.—This insect was materially reduced by a clean-up campaign on more than 400,000 acres of cotton in the lower Rio Grande Valley and adjacent counties in Texas.

BEE CULTURE

Resistant strains of honeybees to American foulbrood has resulted in the distribution of 232 resistant queens to agricultural agencies in 34 states.

MOSQUITOES

During the year members of the Bureau assisted several defense agencies by making mosquito surveys in the vicinity of military camps on the Atlantic seaboard and Gulf coast, by furnishing working plans and estimates covering mosquito control programs. Investigations showed specimens of the mosquito *Culex tarsalis* collected in nature to be infected with both the equine (western) and human (St. Louis) strains of encephalomyelitis (sleeping sickness).

INSECT CONTROL MEASURES

Ticks.—Evidence was obtained that populations of the American dog tick, carrier of the dread Rocky Mountain spotted fever of man, can be consistently though slowly reduced in a heavily infested area by systematically dipping all dogs and the poisoning of meadow mice, the favorite hosts of these ticks.

Secretions of Insects.—A new healing agent for purulent wounds, ammonium allantoinate, has been discovered in the secretions of fly maggots. Another healing agent discovered in the secretions of fly maggots and known as Extract K is available for treating osteomyelitis, one of the most serious complications that follows war wounds.

Clothes Moths.—A new mothproofing agent has been discovered during the year. Considerable time has been spent in advising the defense agencies of stocks of raw wool, blankets, and stored food. Building and commodity fumigation technique has been demonstrated at cantonments for the benefit of military agencies.

Screwworms.—A modified plan of ranch management has been developed to reduce losses from screwworms. The plan involves production of calves and other animals and performing surgical operations on livestock only between certain dates. An effective remedy was developed for destroying the worms in the wounds of livestock and at the same time protecting them from further attack in one operation.

Stable Flies.—Along the coast of

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northwest Florida extensive breeding of stable flies, or dog fly, was found to take place in bay grasses deposited on beaches by tidal action. Creosote oil diluted with three parts of Diesel oil will kill the larvae if it is applied with a high-pressure sprayer. Using this method, a successful control campaign in the vicinity of military camps and air fields was conducted by the Public Health Service and the Department of Agriculture.

FOREIGN PARASITE INTRODUCTION

The foreign investigations on the natural enemies of crop pests were continued throughout the year at the field stations at Yokohama, Japan, and Montevideo, Uruguay, and the imported material was received and passed through quarantine at the Hoboken, N. J., receiving station. A total of 41 lots of parasite material was received at that station.

CONTROL INVESTIGATIONS

Approximately 2500 tests were made on about 200 synthetic compounds as stomach poisons to leaf-eating insects. Phthalonitrile, 1,4-diphenyl semicarbazide, p-aminoacetanilide, and p-aminoazobenzene hydrochloride have been found effective against a number of leaf-feeding insects and to be tolerated in insecticidal quantities by a number of crop plants. Tests on greenhouse insect pests indicate that nicotine and possibly other insecticides, when applied in combination with oleic acids or other wetting agents, may be more effective when dispersed as aerosols.

INSECTICIDE INVESTIGATIONS AND APPLICATIONS

Methods and apparatus for applying insecticides in an air-blended mixture from an autogiro were tested on a series of mixtures. Approximately

600 acres of mountainous forest land were treated for gypsy moth with air-blanded lead arsenate and fish oil this season.

Emphasis was given to work on nicotine. This substance is known to possess insecticidal powers but heretofore has been obtainable only from certain Australian solanaceous plants. The recovery of considerable quantity from a Maryland variety of tobacco opens a new avenue for investigations of this material. A new, short method of determining the pyrethrins in pyrethrum flowers and investigations on materials which might be added to the pyrethrins to enhance their action are under way. Sesame oil has been found to increase the kill of houseflies in pyrethrum-kerosene sprays. Phenothiazine gained new importance when it was discovered that grinding this material to exceedingly fine particle size renders it much more effective than the usual commercial powdered form.

TRANSIT INSPECTION

During the fiscal year 1941 nearly 1,500,000 shipments moving by common carriers were examined at 23 points of inspection, resulting in the interception of 2,839 lots of material moving in violation of Federal domestic plant quarantine regulations.

FOREIGN PLANT QUARANTINES

In the fiscal year, 26,867 ships from foreign countries and our off-shore possessions were inspected. On the Mexican border, 58,152 freight and passenger cars were inspected and at 25 airports, 6946 airplanes arriving from foreign countries or our off-shore possessions were inspected. In all of this work there were 68,201 lots of foreign plants and plant products intercepted when arriving contrary to our foreign plant quarantine regulations.

FISHERIES

BY CHARLES E. JACKSON

FISH AND WILDLIFE SERVICE, DEPARTMENT OF THE INTERIOR

FISHERIES IN THE NATIONAL ECONOMY

At least one man of every thousand Americans owes his livelihood to our commercial fisheries. Over 130,000 citizens, to be exact, are directly and daily caught up with these resources which occupy, therefore, a most substantial position in the national economy. Conserving these resources—adjusting yields to reproduction rates, regulating and managing commercial fisheries, and making fishery products serve the nation to the greatest possible degree—is an important aspect of the responsibility of the Fish and Wildlife Service, U. S. Department of the Interior.

MANAGEMENT OF MARINE FISHERIES

About 96 per cent of the 4,250,000,000 pound annual yield of the commercial fisheries comes from salt water. Management of these marine fisheries is comparatively new and embraces a program which will require the exercise of the best skills of the Service and other scientists, in addition to the closest cooperation of industry and administrators.

Since these details often differ from those concerned with the management of inland sport fisheries, the Service is confronted at the outset here with certain limitations. It is possible, for example, to restock a trout stream with the products of a hatchery. It is not possible, however, to replenish the sea by the same direct means. Furthermore, man can do little or nothing to control the cosmic forces of the sea, although recognizing that abundance of predatory sea creatures, adequacy of the food supply, drift of ocean currents, temperature and salinity of the water, all bear a direct and vitally important relation to the survival and well-being of fish populations.

There is, in fact, only one way in which man can appreciably influence the abundance of marine fish populations, and that is by fishing. By unwise fishing he can deplete a stock to dangerously low levels; by properly controlled and directed fishing he can maintain fish populations at a level that produces a dependable yearly crop. If the only controllable influence on abundance is the fishery itself, it follows that the only effective means of control is management of the intensity of fishing operations.

REGULATION AND CONSERVATION PROBLEMS

No general rule can be laid down which will define safe limits of exploitation for all species alike. It is now rather generally understood that the various species of fish differ widely in fertility, growth-rate, and success of reproduction. These differences, which must be discovered by biological investigation, determine the specific management aims for each species. Where there is a direct relation, for example, between the number of spawners and the number of young that survive to commercial size, as appears to be true of the shad, then it must be determined how many spawners are needed to maintain the stock at desirable levels. If in some years, on the other hand, nearly all the eggs and young produced during the spawning season survive, and in other years almost all perish, some principle of conservation other than protection of a spawning reserve must be sought.

The striped bass and the Atlantic mackerel are fish for which number of spawners seems to bear little relation to number of surviving young. Here sound management requires such regulation of the fishery as to leave the fish in the water until they have completed their period of most rapid

growth. Thus is permitted harvest of the largest possible poundage out of each year's brood.

Examples might be multiplied indefinitely. Those cited, however, serve to illustrate the fact that intelligent management of each fishery is a problem unto itself; that, in order to safeguard the interests of the consuming public and of all groups of fishermen, a well-planned continuous program of biological investigations is indispensable. These must not only demonstrate whether or not the stock is being overfished; they must also determine a rate of fishing which will remove only the surplus beyond that needed for the maintenance of the population.

The industry itself makes important contributions to this latter phase of biological fishery investigations. For example, in order to determine what amount of gear should be fished to take the surplus poundage of fish, a great deal more information is needed about the catching capacity of all kinds of fishing gear than is now at hand. Some states obtain this information by asking fishermen for complete records of their daily catches by type of gear. This is basic information; and, in furnishing it, the fishing industry does much to hasten the day of sound and businesslike management of the fisheries.

ASPECTS OF COMMERCIAL VS. SPORT FISHING

An analysis of expenditures shows that the Fish and Wildlife Service, out of its total appropriation, in a recent year spent about \$50,000 more for game fisheries than for the commercial fisheries. A cursory review of the Service's annual report on the propagation and distribution of fishes from Service fish cultural stations may leave a reader with an erroneous impression. For instance, the report indicates an annual production of 8,000,000,000 fish and eggs. In the breakdown of varieties, however, are shown 7,000,000,000 commercial species and only 1,000,000,000 game species, leaving the sportsman with the impression

that there are produced seven times as many commercial as game species.

The facts are, actually, that commercial species, with the exception of lobsters, are all planted in the fry stages, are not fed in Service hatcheries, and in most cases are planted when only a few days old. The cost of production, therefore, is insignificant when compared with game fish. They are distributed as fingerlings, in 6-, 7-, 8-, and 9-inch sizes, necessitating expensive feeding, large water areas, and a long period of holding in Service production units.

The cost of producing commercial fishes average \$21 per 1,000,000, while the cost of producing game species averages \$6,146 per 1,000,000. A 1,000,000,000 planted game fish in fresh waters of the country come nearer meeting the demand than 7,000,000,000 commercial species planted in commercial waters. About eight-tenths of Service fish-culture appropriation is expended for the production of game species.

The figures, therefore, are easily misinterpreted, and merit a closer analysis by the sport fisherman in order to get the true picture. As a matter of fact, practically every variety found in the coastal and inland waters is sought at some time or place by the hook-and-line fishermen for recreation. The hatchery contribution to recreation, therefore, really consists of billions of semi-game as well as strictly game fish.

FEDERAL VS. STATE CONTROLS

Under our laws, except in Alaska and certain international waters, actual administration and control of the fishery resources is a function of the states. During the last 20 years, it has become increasingly apparent that the traditional methods of regulating commercial fisheries—by state laws imposing closed seasons, minimum size limits, net and mesh specifications—are outmoded and frequently ineffective. None has served to balance the rate of withdrawal against the rate of replacement; none is sufficiently flexible to take into account constantly changing conditions.

Dissatisfaction with the independent state control of the commercial fishery resources of waters that are under the simultaneous jurisdiction of two or more states, has led to considerable agitation during the last few years for control by an agency of the Federal Government. However desirable such a course might appear to be, there are many legal difficulties in the way of its realization.

Attempts have been made from time to time to secure the enactment of uniform regulations in states that govern the same fishing waters. For the most part, these have been unsuccessful; the principal reasons for failure being cumbersome and conciliatory methods of legislation and lack of uniformity in enforcement. For example, there was the compact between Washington and Oregon, ratified by Congress in 1918, to conserve and fully to develop the fisheries of the Columbia River. These fisheries have not greatly benefited by the program of legislation.

Now, however, engendered in large part by the success the Service has had in the application of sound methods of management based on scientific principles to the salmon fisheries of Alaska, comes a proposal which may result in a comprehensive plan for regulation of the entire fishery resources of these Columbian waters. The Columbia River Fishermen's Protective Union recently went on record as favoring the transfer of jurisdiction over the fishery industry of the Columbia River and its tributaries from the respective states to the U. S. Fish and Wildlife Service. A resolution embodying this proposal "to the end that sound and constructive conservation of (this) salmon run may be maintained" has already been referred to the Service by the President and by the Secretary of the Interior with in-

structions to consider the situation with regard to the transfer.

The success of interstate agreements, commissions, or compacts in the handling of common social and economic problems, however, has suggested another approach to the problem of divided control. This device—the setting up of a management agency for the scientific control of the resource as contrasted with inflexible statutory regulation—has never been applied to the commercial fisheries.

The formation of state compacts for the Great Lakes fisheries and for the Atlantic Coast fisheries has, however, been authorized by Congress. Although no action has yet been taken with reference to the drafting of a Great Lakes compact, an International Board of Inquiry for the Great Lakes Fisheries held extensive hearings during the year and expects to submit concrete recommendations for an international or an interstate agreement on fishery control during 1942.

A draft of a compact for the Atlantic Coast has been adopted by New Hampshire, Massachusetts, Rhode Island, New York, New Jersey, Delaware, and Maryland, and is awaiting final approval by the Congress. The Atlantic Coast Marine Fisheries Compact establishes an interstate commission to coordinate and unify state control of the fisheries and designates the Fish and Wildlife Service as the official research and advisory agency.

This outlines in broad fashion the principles, trends, and objectives of conservation of our commercial fisheries. The new philosophy of conservation is one of management, not prohibition and curtailment by rigid legislation. Conservation is thus seen as good business, and good business can not thrive on idle capital. Conservation and utilization must be partners.

FORESTRY

By CHARLES E. RANDALL

FOREST SERVICE, DEPARTMENT OF AGRICULTURE

CONGRESSIONAL REPORT ON FOREST ECONOMY

One of the highlights of the 1941 forestry year was the significant report on the forest situation in the United States made by the Joint Congressional Committee on Forestry. Following a three-year study this special committee of Congress in March, 1941, issued a report calling for "the establishment of a real forest economy in this country which, as an important segment of the broad agricultural economy, will put to constructive use one-third of our total land area."

The Joint Congressional Committee was set up at the request of President Roosevelt who, on March 14, 1938, addressed a message to the Congress calling attention to the fact that the nation's forest resources are still being exploited faster than they are being replaced.

The Congress on June 14, 1938 approved a concurrent resolution which established a committee of five senators and five members of the House of Representatives, under the chairmanship of Senator John H. Bankhead of Alabama. The Committee held public hearings at Mobile, Ala.; San Francisco; Jacksonville, Fla.; Sun Valley, Idaho; Syracuse, N. Y.; Portland, Ore.; Madison, Wis.; and Washington, D. C. Special effort was made to hear small forest owners and industrialists, who did not have the advantages of membership in formal organizations, in all the major forest regions.

The Joint Committee's report indicated that the problems which must be overcome to make a forest economy a reality are varied and serious and that "these problems arise in part from destructive forest exploitations; in part from natural, economic and political circumstances more or less beyond the control of the individual owner." It added that "Amer-

ica is in transition from a philosophy of exploitation to one of planning and applying sustained yield management and orderly utilization."

SCOPE OF THE COMMITTEE REPORT

The United States has enough forest land, the report said, to produce all the timber needed for domestic use, plus a surplus for export. Total drain, however, as of 1936, through cutting and losses by fire, insects, and disease, on the combined forest capital of saw-timber and cordwood-size material exceeded growth by more than 2,000,000,000 cubic feet. The drain on saw-timber, estimated at 47,800,000,000 board feet, exceeded total saw-timber growth by 15,800,000,000 board feet, or by 50 per cent.

The nation's major forest problem, the report said, has to do with forest lands in private ownership. Destructive forest exploitation has been a primary factor in creating many of the country's critical rural problems.

COMMITTEE RECOMMENDATIONS

The Committee made 16 recommendations for definite action aimed at balancing the nation's forest budget. Several of the major recommendations had to do with forest protection, contemplating increased Federal authorizations and appropriations under the 1924 Clarke-McNary Act for the purpose of extending and intensifying cooperative protection against fire, forest insects, and diseases on private and state-owned forest lands, as well as provisions for more adequate protection against fire, insects, and disease on the National Forests.

Coupled with these was a recommendation for some measure of public regulation of all forest lands that would set up certain minimum rules of forestry practice designed to pre-

vent destructive exploitation and maintain the productivity of the lands.

Federal aid in the development of state and community forests was recommended, along with continued Federal acquisition of lands for national forest purposes.

The Committee recommended various public aids to private forest landowners designed to encourage sound forest management. Measures recommended included increased production and distribution of trees for reforestation purposes; management and marketing advice to woodland owners; provision for a forest credit system to make long-term, low-interest loans available to timber and naval stores operators, contingent upon sound forest practices; public aid in the development of farm forest co-operatives; and legislation providing for leases and cooperative agreements between the U. S. Forest Service and private landowners, communities, institutions and states to provide technical aid in the management of forest holdings and help build up deteriorated forests.

Extension and intensification of research at the U. S. Forest Products Laboratory and at the Forest Service experiment stations was recommended. The committee also proposed an annual authorization of \$750,000 for early completion of the nation-wide forest survey now in progress.

Legislation to put into effect various recommendations of the Joint Committee was introduced in Congress during the year.

FORESTRY AND NATIONAL DEFENSE

The impact of the national defense effort upon the forests and upon forest industries producing lumber, pulp and paper and other wood products was felt in all corners of the nation. The national defense construction program undertaken by both Federal and private capital, for Army and Navy bases, for factories and for housing, developed an increasing demand for lumber and framing ma-

terial in all sizes at a time when the inventories maintained by wholesale and retail dealers were at a particularly low ebb. Shortages in some lines of paper products developed.

In addition to the regular uses of wood in construction as lumber and light or heavy framing, wood is receiving increased recognition and use as an engineering material in many items such as pipe lines and tanks for water systems and chemical plants. The chemists and physicists are regularly developing new uses for wood by breaking down its component parts and making new products from which are made such things as plastics, gunpowder, vanilla extract, engine fuel in the form of gas, surgical dressings, rayon, artificial wool and cotton for clothing, parachutes and other textiles, charcoal for gas masks and steel production, rosin for shrapnel, turpentine for flame throwers, cellulose acetate for photographic film, and many more.

RESEARCH IN UTILIZATION OF FOREST PRODUCTS

The defense program needs also stimulated research in the selection, protection, proper use, substitution and conversion of forest products including natural and modified wood. Between 70 and 80 per cent of the research at the Forest Service's Forest Products Laboratory at Madison, Wis., during the year was devoted to work connected with the defense program. This work was conducted in close collaboration with the Army, Navy, and private industries engaged in defense work. Problems under investigation included the development of substitutes for cork, kapok, aluminum alloys, and many uses of metal; the development of better methods of wood selection and suitable seasoning technique to meet the increased use of wood in ship construction and other defense needs where the moisture requirements and other specifications are extremely exacting; the production of alpha cellulose for explosives; and use of plastic wood and wood plastic, laminated and spliced wood

and plywood for airplane construction.

In cooperation with the Army's Ordnance Department, the Forest Products Laboratory began a special study of shipping-container problems, extending from small food containers for shipment of materials under the lease-lend program to the crating of entire trucks, airplanes, and large guns. Methods of packaging and crating were sought that would combine maximum strength and durability with minimum weight. The Laboratory assigned shipping container specialists to serve as advisors at each of the major Army ordnance depots and arsenals.

A new synthetic resin treatment of wood, developed at the Forest Products Laboratory, indicated important possibilities for airplane construction. The treatment consists of impregnating and plasticizing the cell wall structure of wood sheets with synthetic resin-forming chemicals, from which can be made a highly compressed, laminated wood. The new material is hard and strong, moldable, more easily worked than metals, and shows high resistance to swelling and shrinking.

THE TIMBER PRODUCTION PROBLEM

The increased demand for wood products accelerated the rate of harvesting available mature timber while the lack of adequate reserve stocks and of normal imports of pulp from the Scandinavian countries made the problem even more pressing. In setting up production goals for agricultural and related commodities under the defense program, the Department of Agriculture estimated 1942 requirements of 32,000,000,000 board feet for lumber, an increase of more than 7,000,000,000 feet over the 1936-40 average. Pulpwood production requirements for 1942 were estimated at 15,800,000 cords, as compared with the 1936-40 average of 9,300,000. For all the wood, 1942 requirements were put at 6,100,000,000 cubic feet, compared with the 1936-40 average of 5,300,000,000 cubic feet. Turpentine

requirements were placed at 400,000 barrels, nearly a third above 1941 production.

At the same time, the Department warned against unwise and destructive liquidation of forest resources. The tendency in an emergency is to overcut the most valuable and accessible timber stands. With proper management, however, the Department said, the forests of the United States could be made to meet both present and future needs without depletion.

NATIONAL FOREST ANNIVERSARY

The 50th anniversary of the establishment of the National Forest system was observed in 1941 as a milestone in the progress of conservation of the nation's natural resources.

The first National Forest to be established in the United States observed its 50th birthday with a party at Cody, Wyo. on Aug. 24, 1941. The Shoshone National Forest was created by presidential proclamation in 1891, when approximately 1,240,000 acres of public domain land were set aside as the Yellowstone Timberland Reserve.

The golden anniversary of the second oldest National Forest in the United States and the oldest such unit in Colorado was also celebrated during the year with a festival at Meeker, Col. in October. The White River National Forest was established by President Harrison's proclamation creating the White River Plateau Timberland Reserve, containing 1,198,080 acres, on Oct. 16, 1891.

This modest start of the present National Forest system was made possible by Act of Congress on March 3, 1891 which gave the President power to establish forest reserves from the public domain. Before his term expired, President Harrison set aside forest reservations totaling 13,000,000 acres, and President Cleveland proclaimed more than 20,000,000 acres of new forest reserves during his term of office. During the period 1901 to 1909, President Theodore

PERIODICAL PUBLICATIONS

Roosevelt set aside or proclaimed more than 148,000,000 acres for public forests.

It was not until 1905, when the present Forest Service was created in the Department of Agriculture and the forest reserves were placed under its jurisdiction, that active management of the public forests for continuous production and public service began. The guiding principle for administration of the reserves, laid down at that time and followed since, was "the greatest good of the greatest number of people in the long run."

In 1907 the name "Forest Reserve" was changed to "National Forest" to correct the impression that the forests were withdrawn from public use. The Weeks Law, enacted March 1, 1911, established a new national policy providing for Federal purchase of forest lands necessary to the protection of the watersheds of navigable streams. Most of the National forests east of the Great Plains have been established under this Act.

Today, the national forest system, now numbering 160 units and containing a net area of 176,000,000 acres, is the world's outstanding public forest system. It represents the first large-scale trial of public administration and management of a natural resource in the United States. Its birth marked the real beginning of the conservation movement in America.

THE NATIONAL FOREST OF DISCOVERY

The newest unit in the Federal

forest system is the National Forest of Discovery which was dedicated Sept. 28, 1941 at Richardson's Landing on the Mississippi River above Memphis.

This new public forest, which may eventually include some 320,000 acres of land extending for 100 miles along the Mississippi River north of Memphis, is unique in that its nucleus is formed from the gifts of land by local people. It is the outgrowth of a campaign started a few years ago by public-spirited citizens of Memphis and vicinity. Finally an area was selected and, following negotiations with the Forest Service, approved for purchase when and if funds became available. The site for the new Forest includes bottomland which occasionally suffers some degree of inundation. It is characterized also by crumbling loess bluffs and eroded ridge land. Once this was a lush primeval forest but now it is an area of exhausted and eroding soil. A few of the area's virgin hardwoods remain, and there are some stands of young growth. On most of the area, however, reforestation and restoration work will be required; gradually it will be brought back to productivity.

The Forest was named in commemoration of the 400th anniversary of the discovery of the Mississippi River by Hernando De Soto. At the dedication ceremony, Earle H. Clapp, Acting Chief of the United States Forest Service, said: "We dedicate this new forest, not as a dead monument of bronze and stone, but as a living monument of eternal growth."

PERIODICAL PUBLICATIONS

Agricultural Education
1714 Locust Street, Des Moines, Ia.
Agricultural Engineering
American Society of Agricultural
Engineers, St. Joseph, Mich.
American Agriculturist
Savings Bank Bldg., Ithaca, N.Y.
American Forests
American Forestry Association, 919

Seventeenth St. N.W., Washing-
ton, D.C.
American Fruit Grower
1370 Ontario Street, Cleveland, O.
Country Gentleman
Curtis Publishing Company, Inde-
pendence Square, Philadelphia.
Cotton Trade Journal
810 Union Street, New Orleans, La.

XI. AGRICULTURE AND ALLIED INDUSTRIES

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| <p><i>Dairy World</i>
608 South Dearborn Street, Chicago.</p> <p><i>Farm Journal</i>
Farm Journal Inc., Washington Square, Philadelphia.</p> <p><i>Fishing Gazette</i>
461 Eighth Ave., New York City.</p> <p><i>Forestry News Digest</i>
American Tree Association, Washington, D.C.</p> <p><i>Hoard's Dairyman</i>
Fort Atkinson, Wis.</p> <p><i>Journal of Agricultural Research</i>
Superintendent of Documents, Washington, D.C.</p> <p><i>Journal of the American Society of Agronomy</i>
Geneva, N.Y.</p> | <p><i>Journal of Dairy Science</i>
Ohio State University, Columbus, Ohio.</p> <p><i>Journal of Farm Economics</i>
American Farm Economic Association, Menasha, Wis.</p> <p><i>Journal of Forestry</i>
Society of American Foresters, Washington, D.C.</p> <p><i>Pacific Fisherman</i>
71 Columbia Street, Seattle, Wash.</p> <p><i>Produce Guide</i>
165 Duane Street, New York City.</p> <p><i>Successful Farming</i>
Meredith Publishing Company, Des Moines, Ia.</p> <p><i>Wallace's Farmer and Iowa Homestead</i>
1912 Grand Ave., Des Moines, Ia.</p> |
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COGNATE SOCIETIES AND RESEARCH INSTITUTIONS

(For further information, the reader may address the following organizations)

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| <p>AMERICAN ASSN. OF NURSERYMEN,
P.O. Box 355, Louisiana, Mo.</p> <p>AMERICAN COUNTRY LIFE ASSN., 297
Fourth Ave., New York City.</p> <p>AMERICAN FARM BUREAU FEDERATION,
58 E. Washington St., Chicago, Ill.</p> <p>AMERICAN FORESTRY ASSN., 919 Seven-
teenth St., N.W., Washington, D.C.</p> <p>AMERICAN NATIONAL LIVESTOCK ASSN.,
515 Cooper Bldg., Denver, Col.</p> <p>AMERICAN ORNITHOLOGISTS' UNION,
U.S. National Museum, Washing-
ton, D. C.</p> <p>AMERICAN PHYTOPATHOLOGICAL SOCI-
ETY, Bureau of Plant Industry,
Washington, D.C.</p> <p>AMERICAN POULTRY ASSN., Fort
Wayne, Ind.</p> <p>AMERICAN SOCIETY OF AGRONOMY, Ag-
ricultural Experiment Station, Mor-
gantown, W.Va.</p> <p>AMERICAN SOCIETY OF ANIMAL PRO-
DUCTION, University of Nebraska,
Lincoln, Neb.</p> <p>AMERICAN SOCIETY OF EQUITY, 311
Daily Star Bldg., Minneapolis,
Minn.</p> <p>AMERICAN SOCIETY FOR HORTICULTURAL
SCIENCE, Lock Box 299, Geneva,
N.Y.</p> | <p>AMERICAN SOCIETY OF MAMMALOGISTS,
College Station, Texas.</p> <p>AMERICAN VETERINARY MEDICAL ASSN.,
221 N. La Salle St., Chicago, Ill.</p> <p>ASSOCIATION OF LAND-GRANT COLLEGES
AND UNIVERSITIES, c.o. Experiment
Station, Lexington, Ky.</p> <p>BOYCE-THOMPSON INSTITUTE FOR
PLANT RESEARCH INC., 1086 N.
Broadway, Yonkers, N.Y.</p> <p>DAIRYMEN'S LEAGUE CO-OPERATIVE AS-
SOCIATION, INC., 11 W. 42nd St., New
York City.</p> <p>FARM WOMEN'S NATIONAL CONGRESS,
Clarksville, Ia.</p> <p>INSTITUTE OF AMERICAN MEAT PACK-
ERS, 509 S. Wabash Ave., Chicago, Ill.</p> <p>INTERNATIONAL FARM CONGRESS OF
AMERICA, Continental Bldg., Kansas
City, Mo.</p> <p>ISAAK WALTON LEAGUE OF AMERICA,
Merchandise Mart, Chicago, Ill.</p> <p>JEWISH AGRICULTURAL SOCIETY, INC.,
301 E. 14th St., New York City.</p> <p>MIDDLE ATLANTIC FISHERIES ASSN.
INC., 203 Front St., New York City.</p> <p>NATIONAL ASSN. OF AUDUBON SOCI-
ETIES, 1006 Fifth Ave., New York
City.</p> <p>NATIONAL BOARD OF FARM ORGANIZA-</p> |
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COGNATE SOCIETIES AND RESEARCH INSTITUTIONS

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| <p>TIONS, 1731 I St., N.W., Washington, D.C.</p> <p>NATIONAL DAIRY COUNCIL, 111 N. Canal St., Chicago, Ill.</p> <p>NATIONAL EDUCATIONAL AND CO-OPERATIVE FARMERS' UNION OF AMERICA, 1731 I St., N.W., Washington, D.C.</p> <p>NATIONAL FERTILIZER ASSN., 676 Investment Bldg., Washington, D.C.</p> <p>NATIONAL GRANGE, 970 College Ave., Columbus, O.</p> <p>NATIONAL HIGHWAYS ASSOCIATION, Bass River, Cape Cod, Mass.</p> <p>NATIONAL LIVESTOCK AND MEAT BOARD, 407 S. Dearborn St., Chicago, Ill.</p> <p>NATIONAL POULTRY COUNCIL, Davisville, R. I.</p> | <p>PEOPLE'S LOBBY, INC., THE, Burchell Bldg., N.W., Washington, D.C.</p> <p>SOCIETY OF AMERICAN FLORISTS AND ORNAMENTAL HORTICULTURISTS, INC., Stevens Hotel, Chicago, Ill.</p> <p>SOCIETY OF AMERICAN FORESTERS, 825 Hill Bldg., Washington, D.C.</p> <p>UNITED STATES LIVESTOCK SANITARY ASSN., 33 Livestock Exchange Bldg., Wichita, Kan.</p> <p>VEGETABLE GROWERS' ASSN. OF AMERICA, c.o. F. L. Allen Co., Philadelphia, Pa.</p> <p>WOMEN'S NATIONAL FARM AND GARDEN ASSN., INC., Amber, Pa.</p> |
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DIVISION XII

MINERAL INDUSTRIES

GOLD AND SILVER

BY ARTHUR NOTMAN
MINING ENGINEER AND GEOLOGIST, NEW YORK

GOLD

For the first time since 1932, there was no increase in world gold output *ex* Russia. There are still no reliable figures for Russia. Estimates still place the Russian production of gold at about 5,000,000 ounces. There is no reason to believe that the war interfered with gold mine operations in that country.

The United States, including the Philippine Islands, and the British Empire accounted for 80% of the total gold *ex* Russia. Undoubtedly, the year 1942 will show a decline in output, with no recovery likely until after the war is over.

GOLD PRODUCTION

(Fine Ounces)

	U. S.	British Empire	World <i>ex</i> Russia
1939	5,559,139	22,169,506	34,408,450
1940	5,919,928	23,727,920	36,397,000
1941	6,019,000	23,700,000	36,336,000

SILVER

The silver production of the world made a new high in 1941. The previous top figure was reached in 1937 at 275,645,045 ounces. The production total for the United States in 1941 was the highest for any year since 1916. The previous top in 1915 was 74,961,075 ounces. Production was stimulated by the substantial premium paid for domestically mined silver—71¢ as compared with a world price of about 34¢ an oz.—and the increased demand for the non-ferrous metals. A new high is in prospect for 1942, as both these factors will continue to exert their influence.

SILVER PRODUCTION

(Fine Ounces)

	U. S.	World
1939	57,808,000	258,776,665
1940	67,013,000	273,690,300
1941	72,000,000	291,000,000

IRON AND STEEL

BY EDWIN F. CONE
EDITOR, *Metals and Alloys*

GENERAL

Many developments of great importance to the American steel industry have transpired since this review of a year ago. In every department of the

industry—pig iron, steel ingots and castings, rolling mills, forgings—operations in 1941 gained a momentum that practically reached capacity operations. This state of affairs was

IRON AND STEEL

brought about by the gradually increased tempo of the defense program and, late in the year, by the declarations of war by Japan, Germany, and Italy.

By the close of 1941, both steel ingot and pig iron production averaged close to capacity, exceeding rated capacity in some districts. During the last quarter of the year, steel ingot production was at the average rate of 98.5 per cent of capacity. In the first quarter it was 97.8 per cent; in the second, 98.2 per cent; in the third 95.2 per cent of capacity; the average operating rate for the year was 97.4 per cent of capacity, a volume never before attained. This compares with an average of 82.1 per cent for 1940.

PIG IRON AND STEEL OUTPUT

A new record in both pig iron and steel production was made in 1941. Preliminary data of the American Iron and Steel Institute show that 82,927,557 net tons of steel ingots were made; this is nearly 25 per cent more than the previous peak output in 1940 when the total was 66,981,662 tons. During the boom year 1929, the total was 63,205,490 tons, the record until 1940. Also the 1941 total exceeds by 65 per cent the peak output during the first World War or 50,467,880 tons in 1917.

An important development in 1941 was the increase in capacity of the steel industry. According to the Institute, the average capacity at the end of 1940 was 81,619,496 net tons. By the close of 1941 this capacity had increased to approximately 88,000,000 tons, due to new open-hearth furnaces, augmented capacity of old furnaces, and a large increase in the number of electric steel melting furnaces. The electric steel furnace capacity at the end of 1941 has been calculated at 3,000,000 tons—the output in 1940 was 1,700,000 tons—a feature of that year's developments.

Operations of pig iron blast furnaces were at a high rate, particularly during the last few months. Reliable data put the 1941 production of pig

iron and ferro-alloys at 55,903,700 net tons. The operating rate during the last four months averaged over 98.9 per cent of capacity with the year's average placed at 96.6 per cent.

The 1941 total of 55,903,700 net tons was about 17 per cent in excess of the previous record of 47,727,661 tons in 1929. In 1940 the total was 47,398,529 tons.

One of the features of blast furnace history in 1941 was the production of ferromanganese, a highly essential material in making steel. A new record was made. The average monthly production was 44,930 net tons as against 39,472 tons per month in 1940. The total 1941 output was 539,163 tons.

PIG IRON AND STEEL OUTPUT IN NET TONS

Year	Pig Iron	Steel
1941.....	55,903,700	82,927,557
1940.....	47,398,529	66,981,662
1939.....	35,677,097	52,798,714
1938.....	21,460,164	31,751,990
1937.....	41,582,550	56,636,945
1936.....	34,752,689	53,499,999
1935.....	23,937,423	38,183,705
1934.....	18,075,202	29,181,924
1933.....	14,947,074	26,020,229
1932.....	9,835,227	15,322,901
1931.....	20,637,516	29,058,961
1930.....	35,562,429	45,583,421
1929.....	47,727,661	63,205,490
1925.....	41,104,634	50,840,747
1920.....	41,357,105	47,188,886

ALLOY STEELS

With the greatly increased demand for alloy steels for war purposes, particularly aviation steels and armor plate for planes and tanks, the alloy steel industry had a momentous year in 1941. Data for this class of steels in 1941 are not available until later in the year, but statistics covering 1940 have been published. It is, therefore, possible to bring the data in the 1940 report up to date.

The total alloy steel production in 1940 was 4,965,887 net tons, a new record. This total was 12 per cent larger than the previous record in 1929 when 4,432,072 tons were produced. The following table covers the 1929-40 period:

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Year	Total Alloy Steel	Per Cent of Total Steel
1929.....	4,432,072	7.01
1930.....	2,736,508	6.00
1931.....	1,630,623	5.62
1932.....	894,436	5.83
1933.....	1,732,845	6.65
1934.....	1,805,748	6.18
1935.....	2,374,017	6.21
1936.....	3,229,657	6.04
1937.....	3,396,541	6.00
1938.....	1,653,510	5.21
1939.....	3,211,955	6.08
1940.....	4,965,887	7.41

Undoubtedly, when the official statistics are available for 1941, another new record will probably have been made for alloy steels including both open-hearth and electric furnaces.

STAINLESS STEELS

A new record in the output of stainless steels was made in 1940, data for 1941 being not yet collected. The total of stainless steel ingots in 1940 was 249,980 net tons, an increase of about 39 per cent over the previous record of 179,620 tons in 1939. The statistics, since data were collected and published, are as follows:

Year	Total Net Tons
1934.....	55,905
1935.....	73,580
1936.....	101,882
1937.....	156,618
1938.....	95,954
1939.....	179,620
1940.....	249,980

Again, without doubt, the 1941 total will reveal a new high because this grade of steel is essential in much of the war effort. The increase may not be so large in 1941 as in 1940, because of the allocation of chromium and nickel for other war uses, particularly armor plate.

ELECTRIC STEEL

An outstanding feature of the steel industry in 1940 and 1941 was the very large expansion in electric steel making capacity and output. Not only was the number of new electric furnaces installed very large, especially in 1941, but the production was stepped up to new heights.

For example, in 1939 the total output of electric steel was 1,029,067 net tons. In 1940 this jumped to 1,700,006 tons. In 1941 the total reached 2,920,849 tons. The 1941 increase over 1940 was nearly 72 per cent. In 1940 the electric steel output was 2.54 per cent of the total steel but in 1941 this jumped to 3.52 per cent.

For more complete information regarding the alloy and electric steel industry, see an article in *Metals and Alloys* (June 1941), "Our Electric and Alloy Steel in 1940."

STRATEGIC AND SUBSTITUTE MATERIALS

The problem of strategic materials was briefly reviewed in this report a year ago. Since then the situation has changed decidedly, in fact the changes are so rapid from week to week that a statement of what was true one week is in many cases not true the following week.

Briefly the situation, as of January, 1942, is about as follows: Manganese has thus far been in plentiful supply but changes in the war might cut off some of our present resources, since most of the manganese ores are imported. The chromium supply is none too plentiful, and the use of the metal has been controlled by the Government; it is allocated only to those industries producing war materials. The demand for nickel is so tremendous that the greatly increased Canadian production is hardly sufficient to meet present and prospective war needs; this metal is also under strict Government control. As to tungsten, supplies have been greatly restricted, but the use of American molybdenum as a substitute, particularly in high speed steels, is relieving the situation. Molybdenum is also a potent factor in relieving the situation of lack of nickel and chromium for certain alloy steels. The tin supply is critical, particularly since the operations by Japan in the Far East. A large supply has been assembled by the government but drastic restrictions in its use are inevitable. In solder, silver can replace tin, and it will be thus used extensively.

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CAPACITY PROBLEM

Despite the 25 per cent increase in steel ingot output in 1941 over 1940, the demand for steel for defense and then for the war program, is so great that government officials have been urging and in some cases arranging for more blast furnaces and open-hearth furnaces. In spite of the demonstrated fact that material necessary for building more furnaces would diminish the amount available for war purposes, the program for greater capacity has gone ahead to some extent. Whether the building of over 30 new blast furnaces and enough open-hearth units to increase the capacity at least 10,000,000 net tons will ultimately be realized, depends on so many intangible factors that a definite prediction can not be made. It is evident, however, that capacity is growing for both pig iron and steel.

There is no little anxiety, however, as to how this very large capacity can be utilized in peace times.

THE OUTLOOK

It is foolhardy to try to predict the future during this world cataclysm. Because of the serious lack of scrap iron and steel as well as a possible shortage of pig iron, there is some doubt whether our 1942 steel production will exceed that of 1941. It takes scrap advantageously to make steel. In the eight years from 1933 to 1940 inclusive, this country shipped to Japan over 10,000,000 tons of scrap or about 53 per cent of our total scrap exports. Now we wish that we had some of this. In any event, the American steel industry will do its best to supply its full capacity of iron and steel to win the war. The job ahead is a stupendous one.

COAL AND COKE

By R. DAWSON HALL

ENGINEERING EDITOR, *Coal Age*

BITUMINOUS PRODUCTION

With a production slightly over 500,000,000 tons, an increase of 11.2 per cent over the output of 1940, and with a minimum price preventing excessive competition, the bituminous industry could hardly fail to have a prosperous year in 1941, though in 1929 the production was 532,591,000 tons, 16.4 per cent higher, and in 1918, during World War No. 1, it was 579,385,820 tons or 8.8 per cent still higher.

ANTHRACITE PRODUCTION

Hard coal also, with allocation of production (a definite tonnage for each company) and an output of 53,735,000 tons, or an increase of 6.3 per cent over the 1940 production, was almost as fortunate as bituminous coal. Anthracite is almost exclusively a domestic fuel and gained from the war possibly only (1) because coke, being regarded by ironmasters as the only

metallurgical fuel, was largely withdrawn by them from the domestic market and replaced by anthracite, (2) because oversea coals are no longer coming in their former volume to Canada and New England, (3) because the oil scare made some consumers either revert to coal or prepare for such reversion by laying in a supply of anthracite, and (4) because the fear of a transportation tie-up made consumers buy early. But the anthracite region will not experience a revival of market as great as that in bituminous areas, unless there is an oil and gas shortage either from a failure, in sufficient volume, to produce those fuels or to transport them to market or both or from a fear of either contingency. Anthracite has largely to depend on the weather and on the further eradication of bootlegging, if it is to have an improved market, unless indeed it can induce the iron industry to ease the coke stringency by the use of anthracite.

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COKE PRODUCTION

Coke is a "war baby." However, the tonnage of byproduct coke is limited to the capacity of the by-product ovens, additions to which can not be made in a short time. Extension of such capacity is feasible only if those who might erect such costly ovens feel sure of a continued need for their product. On the other hand, in the past, a host of inefficient beehive ovens have been abandoned. These can be repaired rapidly at moderate cost, and this has been done wherever coking coal is produced or can be brought in by truck, so the tonnage of beehive coke has increased 107.7 per cent from 3,057,825 tons in 1940 to about 6,352,000 tons in 1941. To aid in visualizing the magnitude of the comeback, it might be said that beehive-coke production in 1938 was only 837,000 tons. Byproduct-coke production has mounted only from 54,014,309 tons in 1940 to about 58,000,000 tons in 1941, an increase of about 7.4 per cent.

In the first World War, a panic occurred in the coal market, though probably there was no actual coal shortage. In consequence, operators extended their plants unduly and disastrously, both in number and magnitude. Thus far, in this war, both market and industry have been conservative, and both should continue to be. In the warm weather, purchasing of coal was urged on the consumer by the government, because it was feared that the railroads would not be able to deliver enough coal in the winter but, when the cold weather came, there was no shortage, and some suggested that there was a buyer's strike, but it was probably merely a reaction from the summer forehandedness and a desire to reduce inventory.

BITUMINOUS COAL SETTLEMENTS

On March 11, 1941 deliberations for a new bituminous wage scale were started by the Appalachian joint wage conferees in New York. A breach soon developed between the Northern and Southern operators as it appeared

that the Northern group would grant a rise in basic wage of \$1 a day, but the Southern group would not accept the demand of the union and wipe out the 40¢ differential existing by giving a \$1.40 increase. On April 3, the miners, declaring they no longer had a contract, ceased work.

Intervention by President Roosevelt ultimately made the Southern operators agree to open their mines, giving the miners a \$1 increase per day while parleying about the other 40¢, with an understanding that any increase would date from the resumption. To this, the mine workers agreed.

Finally, on June 9, as the President proclaimed "a state of total national emergency," the Southern operators capitulated, conceding the abolition of the 40¢ differential. The basic day rate, therefore, becomes \$7. Signature of the contract followed, July 6. Settlement of the Appalachian scale, as usual, determined the scale for the entire bituminous industry. On Oct. 18, the Southern operators formed the Southern Coal Producers, Inc., and they expect hereafter to make their own bargains with the union.

ANTHRACITE SETTLEMENTS

A new contract to run to April 30, 1943, made May 19, 1941, was ratified by the miners by a 7-to-1 vote and signed by the anthracite operators, June 20, at Hazelton, Pa. The mines were idle only one day. Retroactive to May 1, the agreement increased wages 7½ per cent to Oct. 1 and raised that increase to 10 per cent thereafter. In both bituminous and anthracite scales, a \$20 token payment is provided for vacation expense.

SUBSEQUENT STRIKES

An additional national assessment on its members by the United Mine Workers of \$4 a year and an increased local assessment of 50¢ a month caused a strike in the anthracite region against some of the companies making this enforced deduction for "union defense." This strike kept many anthracite miners idle 26 days.

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Companies affected agreed not to collect this new assessment until the men should approve it, despite the obligation of the union contract, and then the strike ended.

Another strike, Sept. 15, involved "captive mines" (coal-producing plants owned and operated by industrial concerns for the supply of their own fuel demands), the purpose of the strike being to institute a union shop. Truce was declared for 30 days, Sept. 19, on action of the National Defense Mediation Board, at the end of which time the strike was resumed. Called off again Oct. 30, it was renewed for five days before Nov. 22, when the question was submitted to three arbitrators named by President Roosevelt, a steel representative, a labor representative and a government employee, which board decided by a 2-to-1 vote that what the President had said the government would never consent to order, *viz.* a union shop, the operators might without umbrage be compelled to adopt by the single vote of a government employee.

OUT-OF-WORK COMPENSATION

In Colorado, Illinois, Iowa, and Kentucky, it appeared from decisions in 1941 that the suspension for wage negotiations in 1939 was a "strike" and that the men had no right, therefore, to unemployment compensation. In Pennsylvania and Ohio, it was ruled that it was not a strike, and even in Iowa 1,500 miners were compensated. In Alabama, the miners of the Tennessee Coal, Iron & R.R. Co., belonging to the Brotherhood of Captive Mine Workers (A.F.L.), were said to be merely afraid of violence and not on strike and so received compensation.

MINIMUM PRICES AND ALLOCATION

Early in 1941, Senator Guffey (Penn.) introduced a bill extending the Bituminous Coal Act for two years after April 26, the latter being the date at which the act would have expired. Removal was unopposed. Allocation, for the time at least, has

improved operating conditions in the anthracite region.

A plan was provided, sponsored by Governor James (Penn.), that gave an operator hiring a man who had been bootlegging, an increased allocation of $3\frac{3}{4}$ net tons per day. It was arranged also that, if a bootleg miner who was operating in January, 1941 should establish his title by lease to the land that he was then mining, he could deliver this coal to an operator who could then maintain his regular allocation under the emergency program, but the arrangement must expire Mar. 31, 1942 or earlier. The voluntary production control bill was signed July 7, and the allocation provisions thereafter were administered by the state.

Bootleg mines decreased in numbers during the year from 3,000 to 800. Many men left for legitimate operations, the World War and defense industries, and 28 legitimate companies have been purchasing legitimized bootleg coal. Tire difficulties in the trucking of coal ultimately may end the bootleg industry. Some of the increased anthracite tonnage is apparent rather than real being due to the greater correctness of the record, now that there is less illegitimate coal to escape tabulation.

PRICE ADVANCES

When wages were increased, no change was made in minimum bituminous prices, largely because the steadier working time had reduced production costs from 12.18¢ per ton (in Alabama) to 35.34¢ (in the Panhandle of West Virginia), though there were two exceptions—Michigan's cost rose 24.20¢ and New Mexico's 21.60¢. On the whole, perhaps, the old minimum prices will work no great hardship so long as business remains brisk.

Increase in prices, July 3, made the Consumers' Counsel of the Coal Division advise against bituminous coal purchases and caused the Office of Price Administration and Civilian Supply to call the anthracite operators into conference. An advisory consultant on prices was appointed.

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The Coal Division opened an inquiry into bituminous prices, Sept. 9, and proposed to set a ceiling over them from 15 to 35¢ above minimum prices. On Sept. 12, Leon Henderson, head of the OPACS forbade an increase of 15¢ on anthracite, but the order was not obeyed and, on Sept. 17, he revoked it. The year ended without any action or any immediate expectation of it.

In the early summer, Indiana Coals Inc. received provisional approval from the Bituminous Coal Division. Price-fixing activities will be scrutinized by that Division which will require a refund to purchasers if prices are found to be excessive. All Indiana operators are included except those in the Brazil Block district.

PRIORITIES

Coal was well treated by the Administration as to priorities, especially toward the end of the year. Given an A-10 priority for repair parts July 29, actual emergencies received top rating. Ultimately the industry was advanced to an A-8 rating with an A-1-a rating for emergencies, but, as has been emphasized, a shaft rope about to break still is not an emergency, the rope has to break (possibly killing a cage load of men) to give emergency status to the right to purchase a new rope.

GOVERNMENT INSPECTION

The Federal Inspection bill was signed by President Roosevelt, May 7, and a Federal inspection of Ohio coal mines was ordered on request from the vice-president of one of the U.M.W. districts. The 107 inspectors, which number may be increased to 250, are subject to a Civil Service test and receive six to eight weeks of intensive retraining. J. J. Forbes, supervising engineer, Safety Division, became Chief Inspector of the U.S. Bureau of Mines force. West Virginia is increasing its state inspection staff, adding 13 men. Effort is being made by operators to increase safety as well as efficiency by courses of training for men who work in the mines.

MINE EXPLOSIONS

Disasters killing ten or more men in 1941 were several. May 22, Panhandle mine, Bicknell Coal Co., Bicknell, Ind., a cooperative mine run by the miners, 14 lives lost. According to the Director, Indiana Bureau of Mines, doors had been left open; methane thus collected which was ignited by an unapproved cutting machine. July 10, Acmar mine, Alabama Fuel & Iron Co., 11 lives lost, was said to have been a methane ignition. Oct. 27, Daniel Boone mine, Stirling Coal Co., near Nortonville, Ky. cost 15 lives; said to have been caused by a timberman with an open light. In no earlier year, has the fatality record been as low as in 1941. Thus, a good record occurs in a year of high production, which is unusual in any industry.

SHUTTLE-CAR DEVELOPMENT

In 1941, the bituminous coal mines added 204 shuttle cars. The dangers of this development have been more generally sounded than its safety features. The coal-dust hazard is being met by spraying the cutter bar with liquid, and, in many operations, the coal is sprayed as often as handled, and coal, which falls from the trucks and lies along the roads, is sprayed also. Some operators are using water; others water, treated with an agent which causes the water to spread over the coal.

One company does not spray the cutter bar or the coal but instead the coal dust as it flies in the air, for wet coal will clog the screens. Coal falling on the roadways is being kept down by sprinkling with liquid or calcium chloride and is cleaned up once a week with a loading machine, and plenty of rock dust used. Some declare their roads pack quite hard. With shuttle cars, the absence of trolley haulage from the face, the decreased haste, and the freedom from runaway mine cars combine to reduce explosion and transportation hazards.

ROOF SUPPORT

Roof falls have been studied by the U. S. Bureau of Mines which has

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definitely shown that, in mines in the Pittsburgh bed around Pittsburgh, moisture is more destructive of the roof than changes in temperature but, as in the moist climates of the East and mid-West, this moisture is found for only about a half mile from portal or shaft; keeping air from contact with roof will not preserve the latter in the working places or in the remoter parts of the mines. Failure, when it occurs, will come from weight of cover. To keep such moisture from the roof, the latter may be gunited or painted, and paint has had growing application, but paint demands, at time of application, a dry roof, and both gunite and paint require complete coverage, or the roof will scale. Jacks and metal beams are making progress as temporary supports.

WAR RESEARCH

Several of the research projects in 1941 had relation to defense and war developments: heating arrangements for Army camps and for small removable workmen's houses; anthracite as a substitute for coke in blast furnaces, for sintering and cupolas; drying of lignite to save transportation of moisture; storage of lignite and effect of using larger quantities of low-volatile coal in the manufacture of coke.

MISCELLANEOUS RESEARCH

Another project was an attempt to make the refuse from certain coal tipples into water-filtration material, which test proved that the coal fraction was better for making such material than the clay fraction, and with coal alone too much fine material was lost. Studies of splint coals suggested that they resulted from intense biologic activity which caused an unusual decomposition and maceration of plant material. Sections show this coal type to be opaque or semi-opaque to light even in the thinnest sections. Splint was found predominantly in Upper Pottsville beds and the Brookville bed. The Hsiao

method of calculating fusain content of coal was vindicated, as also the Coal Research Laboratory's method of determining the ignitability of coal. It was found by U. S. Bureau of Mines that rock dust did not cause or promote timber decay, and mine air containing less than 50,000,000 particles per cubic foot was held by the same authority to produce only a negligible number of silicotic cases so long as the quartz content of the dust was less than 5 per cent.

Diesel-engine performance was shown to be inefficient and to produce undue quantities of carbon monoxide wherever impurities like methane and carbon dioxide are present in the air used by the engine. It was shown also that the wrapper may change the action of an explosive when detonated and revise the temperatures, pressures, and explosion products resulting. Certain bacteria prevalent in the mines were proved to change carbon monoxide to its dioxide and thus to hide the fact that a mine fire is in progress. These bacteria will function in media with pH values from three to 11.

With coal reduced below 20-mesh, rapidity of oxidation does not increase in proportion to the increased surface exposed as is the case with larger coal. Quantity of gasoline obtainable from coal by hydrogenation varies from 136 gallons per ton for Lower Sunnyside coal, Price, Utah, to 63 gallons per ton for Knife River lignite, Beulah, N. D. The largest yield of mellitic acid can be obtained from cokes, carbon black, fusain, or opaque attritus. Attrital-coal material affords more mellitic acid than bright-coal material, and coal resins give a low yield.

A new binderless low-temperature-carbonization product has been developed by G. W. Carter, University of Utah, which he terms a "coal log" but, so far, only a pilot plant is projected. Artificial leather and artificial cork can be made by melting Nylon and blowing inert gas into the liquid to form the necessary cell structures.

XII. MINERAL INDUSTRIES

NON-FERROUS METALS

By ARTHUR NOTMAN

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STATISTICAL DIFFICULTIES DUE TO WAR

Increasing military restrictions on the publication of production figures throughout the world practically preclude accurate figures for the metal industry in 1941 outside the domestic field. Even in the domestic field it is increasingly difficult to secure accurate statistics because of the many complications arising from the growing importations from Canada, Mexico, and Central and South America.

The dislocations of markets for South American production, through the blockade of the European continent, and later the increased demands from this country followed by the embargo on shipments to Japan, and still further demands from domestic consumers, have all contributed to the uncertainties involved in any estimate of production.

RECORD WORLD PRODUCTION

About all that can be said with assurance is that world production of the three major non-ferrous metals—copper, lead, and zinc—undoubtedly registered a new high again in 1941 of approximately 6,600,000 tons, while domestic output perhaps fell little short of the previous high in 1929 of 2,366,000 short tons. World production in 1929 of the three metals was 5,679,422 tons.

DOMESTIC PRODUCTION

Domestic virgin copper production from domestic mines was very little if any short of the 1929 figure of 1,026,348 short tons, and zinc probably exceeded the 1929 figure of 631,600 tons by perhaps 50,000 tons. On the other hand lead probably failed to reach the 1929 figure of 688,000 tons by 150,000 tons.

INFLUENCE OF WAR DEMAND IN PRODUCTION

The war demands for tin, manganese, aluminum, magnesium, nickel,

molybdenum, chromium, vanadium, tungsten, and cobalt no doubt resulted in a grand total of non-ferrous metals production both domestic and world, well in excess of any previous level reached, with further substantial increases certain in 1942, in spite of interference by military operations in certain areas for certain metals, as, for example, tin in the East Indies, chromite in the Philippines, tungsten in China. Fortunately for the United Nations, the main producing areas of all the non-ferrous metals, with the exception of tin and tungsten, as noted above, are in areas more or less remote from military operations, and difficult of assault by the Axis Powers. Shortage of bottoms may continue for some time to come to handicap the free flow of these raw materials to points of consumption within the United States and the British Empire.

MARKET SUPPLIES OF NON-FERROUS METALS

It may be useful to set down the figures covering the probable supplies of the three metals available to the domestic market in 1941, with estimates of the additional amounts available to the British Empire. A comparison with similar figures for the amounts available to the allied governments in 1917-1918 will also prove illuminating.

The growth of production of the newer non-ferrous metals—aluminum, chromium, nickel, magnesium, molybdenum, etc.—since the last war, has been even more startling, and the United Nations have far more than their share of this increase.

It is difficult to believe that there can be any real danger of shortage of supplies of these critical materials for military uses even to meet the colossal program for war recently announced in Washington. However, non-military uses must be cut to the bone,

NON-FERROUS METALS

	1941	
	Supply to the Domestic Market Including Scrap (Short Tons)	Supply to the British Empire Market (Short Tons)
Copper.....	1,437,000	800,000
Lead.....	583,000	750,000
Zinc.....	860,000	320,000
Total.....	2,880,000	1,870,000
	1942	
Copper.....	1,600,000	900,000
Lead.....	1,100,000	650,000
Zinc.....	1,000,000	250,000
Total.....	3,700,000	1,800,000
Grand Total (2 yrs.).....	6,580,000	3,670,000
	1917-1918	1941-1942
	Supply Allied Governments	to the Governments
Copper.....	2,750,000	4,737,000
Lead.....	2,175,000	3,083,000
Zinc.....	1,410,000	2,430,000
Total.....	6,335,000	10,250,000

just as they have been by the Axis Powers. "Business as usual" must be forced out of the picture for the duration.

COPPER

A more detailed review of the copper picture and a forecast for the future are presented below. Similar pictures might be presented for lead and zinc, but without changing the conclusions to be drawn from the facts.

The most important feature of the copper industry in 1941 is the estimated serious shortage of the metal believed facing the defenders of democracy and their allies in 1942 and thereafter for the "duration." This is difficult to comprehend from a review of the probable supply. Based on 1941 partial figures there will be available to the United States and the British Empire in excess of 2,300,000 tons of metal, including scrap, while

the maximum new production available to Germany and Italy will hardly exceed 5% of this tonnage. Nevertheless, it is estimated in Washington that the shortage in 1942 will reach 600,000 tons. The accuracy of the estimate can not be disputed because of lack of information as to how it is made up. On the other hand, even 2,500,000 tons would be more than twice the amount available to the allies in 1918, and 50% more than that derived from the same sources in 1929. Were it not for Hitler's astounding record of military successes to date, one might regard it as a partial measure of the tremendous growth in the use of mechanical equipment and fire power in present day naval and military operations as compared with the first World War.

HITLER'S COPPER SUPPLY

In an article by Colonel Percy E. Barbour, published in the *American Metal Market*, Sept. 23, 1941, convincing evidence is presented to show that, in the six years in which Hitler was preparing for the war, he had for consumption for all purposes about 1,500,000 short tons of copper. The new production available to him since the start of the Polish campaign could hardly have exceeded 500,000 tons. In addition he acquired certain stocks in the occupied areas, particularly France. One can only guess as to the latter amount. However, 1,000,000 tons would certainly be an outside figure. Thus we see that Hitler has re-armed Germany, taken over Czecho-Slovakia, Poland, Denmark, Norway, Holland, Belgium, France, Hungary, Yugoslavia, Greece, Bulgaria, Rumania, and more than half of European Russia, to say nothing of Italy, with probably less copper than Washington now figures the requirements of the British Empire, our own Defense Program and a much curtailed civilian demand for one year.

UNITED STATES COPPER REQUIREMENTS IN WAR

Since the treacherous attack of Japan on Dec. 7, the question of copper supply has been somewhat simplified.

XII. MINERAL INDUSTRIES

At all events, we know now that the defense program alone, including power, light, and transportation, and communications will absorb all the metal that can be procured from all sources. Purely civilian uses must be drastically curtailed if not prohibited. No time must be lost in securing an accurate inventory of all unused stocks of metal, in whatever form and wherever they may be, to be distributed promptly to the plants producing the most urgently needed military supplies.

To increase the output of the virgin metal beyond the objective of the industry for 1942, which was admittedly 500,000 tons short of total requirements for that year, including civilian uses, is a very difficult problem. Furthermore, since Dec. 7, the estimate of total requirements would doubtless be increased. Not only is this true, but the available supply of mining labor will shrink rapidly in the domestic field, because of military needs and the increased demand for all metals. It would appear that the only hope of fairly prompt and material increases of virgin metal output, would be from those properties whose operations are largely mechanized—first the steam shovel mines, and second underground mines, using so-called cheap mining methods recovering low grade ores. It seems doubtful whether much increase over that already projected in the domestic field can be expected, short of several years preparation. Here again labor may eventually prove to be the bottleneck. Even less effective results might be expected from the attempted opening of known deposits, which to date have failed to attract the necessary capital. Now more than ever, is there no good reason for employing labor in a poor copper mine, when there is still a chance to use it in a good one, or on equally important other defense work.

South America and Rhodesia would appear to offer the best opportunity for substantial increases in output without danger of further drafts on shrinking labor supply. If for any reason these sources are inelastic, and the domestic output must be increased,

MARKET VALUE OF SECURITIES AND YIELD, 1920-41

Year	Year-end Market Value of Securities (000,000 omitted)	Yield Based on Interest and Dividends Payments (p. c.)
1920 (lows).....	\$ 700	1.74
1921.....	913	2.10
1922.....	876	2.64
1923.....	959	6.43
1924.....	1,160	4.74
1925.....	1,142	5.67
1926.....	1,140	6.58
1927.....	1,144	7.12
1928.....	2,439	3.88
1929 (highs).....	3,351	4.76
1929.....	1,803	8.84
1930.....	754	11.93
1931.....	334	9.67
1932.....	222	2.35
1933.....	616	2.17
1934.....	530	5.29
1935.....	882	3.61
1936.....	1,652	3.30
1937.....	938	9.49
1938.....	1,176	4.19
1939.....	1,012	5.66
1940 (Dec. 11)....	906	8.24
1941 (Dec. 3)....	809	10.51*

* Estimated.

even with a probable delay of several years, the government should supply the capital and stand the losses that will accrue from the unwanted capacity when the war is over, and ask the large operators to increase their mining, milling and smelting capacities as rapidly as possible.

The estimated shortage of copper has already resulted in proposals to pay two or three different prices for the metal to those marginal producers who can not operate at a price which has proven quite satisfactory to the great bulk of the industry. To those familiar with the industry, the possibility of labor troubles from such a policy is no pleasant prospect.

RECORDS OF AMERICAN COPPER COMPANIES

The following table shows the record of a group of American-owned companies in the United States, Mexico, and South America, from the post-war depression of 1921 to the end of 1940. They contributed about 50% of the world production in 1940, and

NON-FERROUS METALS

SELLING PRICE AND INTEREST AND DIVIDENDS PAID BY CERTAIN COPPER COMPANIES, 1921-40

Year	Production (Pounds) (000 omitted)	Average Selling Price per Pound (cents)	Bond Interest and Dividends Paid		Per Cent of Average Selling Price Paid Out in Bond Interest and Dividends
			Total (000 omitted)	Per Pound (cents)	
1921.....	520,100	12.50	\$ 19,200	3.69	29.5
1922.....	1,064,000	13.38	23,100	2.17	16.2
1923.....	1,581,000	14.42	61,700	3.90	27.0
1924.....	1,924,000	13.02	55,000	2.75	19.6
1925.....	2,030,000	14.04	64,600	3.13	22.6
1926.....	2,114,000	13.86	75,000	3.55	25.7
1927.....	2,156,900	12.92	82,500	3.82	29.6
1928.....	2,496,500	14.57	94,900	3.85	26.4
1929.....	2,440,800	18.11	159,400	5.93	32.7
1930.....	1,888,600	12.98	95,600	4.97	38.3
1931.....	1,702,400	8.116	41,300	2.43	29.9
1932.....	882,200	5.555	8,400	.95	17.1
1933.....	889,706	7.025	13,425	1.508	21.5
1934.....	1,105,538	8.428	28,041	2.536	30.1
1935.....	1,365,190	8.649	31,817	2.331	27.0
1936.....	1,631,754	9.474	54,613	3.347	35.3
1937.....	2,483,866	13.167	89,056	3.585	27.2
1938.....	1,806,860	10.000	49,322	2.729	27.3
1939.....	2,081,704	10.965	57,292	2.752	25.0
1940.....	2,412,144	10.846	74,653	3.095	28.5
Total.....	34,867,162	12.064	1,178,924	3.338	27.7

Note that figure 12.064 average selling price is weighted by applying the average E. & M. J. selling price in New York for each year against the production for that year. This figure is subject to two sources of error. (1) Copper sold in Europe at slightly lower or higher prices than the New York market. Over this particular period, the variations should be largely compensating. (2) The individual companies in the group secured prices somewhat higher or lower than the E. & M. J. average. But these variations should also be compensating in large measure. (3) For 1940 the E. & M. J. average price of 11.293¢ has been used for domestic production, and 10¢/lb. for South American.

a little over 50% in the earlier years, and, therefore, constitute a representative sample of the industry.

It seems probable that this copper group will produce approximately 2,600,000 lbs. in 1941, and receive about 11.6¢/lb. on the average. They will distribute about \$85,000,000 in bond interest, dividends, and net reduction of debt, or about 3.26¢/lb. of output. This is very close to the average of the past 20 years, although accomplished at a price 1.22¢/lb. below the average price of the 20-year period.

COPPER SECURITIES PRICES AND VALUES

The table (page 486) shows the course of copper security prices over the last 20 years for practically the same group considered in the first table. The 1929 highs and 1932 lows

have little relation to actual values. The one is about as absurd as the other. Long continued study of the industry has shown that, given the ore bodies to develop, equip the mines, mills, smelters, and refineries to produce electrolytic copper, together with adequate working capital, requires an actual cash investment of about 35¢ a pound of annual output. Therefore, the group producing 2,600,000,000 lbs. a year has a real investment of about \$910,000,000. This is some \$100,000,000 more than the present market value of the outstanding securities.

At the present time, the net current assets of the group, after allowing for retirement for all fixed debt and bank loans is about \$292,000,000. This amount represents 32% of the total market value, and is as high or higher than at any previous period in the history of the industry.

XII. MINERAL INDUSTRIES

The yield on the present market valuation based on the estimated distribution for 1941 is 10.51%, a figure that has been exceeded only once in the last 20 years (1930) on a valuation \$55,000,000 below the present level.

In 1930, the industry was entering the depression, with rapidly falling volume and prices, a background almost the direct antithesis of the present, although prices so far have been maintained at a reasonable level.

PETROLEUM

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PETROLEUM INDUSTRY COUNCIL FOR NATIONAL DEFENSE

Petroleum is the sinews of war as well as the servant of peace, and the declaration of war with the Axis Powers found the American petroleum industry working at top speed to meet every national defense demand and to continue to supply as far as possible all normal civilian needs.

Government and the industry joined hands in the early summer of 1940 to make effective the widest possible cooperation, and this partnership was formalized at the end of the year by the creation of a Petroleum Industry Council for National Defense, appointed by Interior Secretary Harold L. Ickes, the Petroleum Coordinator for National Defense. During the year the industry, with the cooperation of the government, successfully dealt with a number of potentially serious problems, and the new organization is geared to throw the entire combined weight of the industry behind every government request in meeting future war requirements.

WARTIME DEMANDS ON THE INDUSTRY

The projected 1942 and 1943 demands follow a 1941 consumption of petroleum products which was the greatest in the industry's 80-year history. The total domestic and export demand amounted nearly to 1,600,000,000 barrels, or an average of 180,000,000 gallons a day. This was about 10 per cent above 1940, and was four times the demand in 1918. Production of crude oil in the United States had increased to an average of more

than 4,100,000 barrels a day by the end of 1941, and predictions were made that needs would mount so rapidly as to require production of 4,500,000 barrels daily by the middle of 1942, and possibly of 5,000,000 barrels a day by July, 1943.

Virtually every production, refining, and consumption record in the history of the industry was broken in 1941. Domestic demand for all major products hit an all-time peak, and only exports continued to feel the effect of war-curtailed markets. The total domestic demand reached an estimated 1,476,110,000 barrels, up nearly 12 per cent from 1940. Total exports dropped 25,000,000 barrels to 105,909,000 barrels. In 1938, last year before the war, exports amounted to 193,728,000 barrels, and have been declining ever since.

INDUSTRIAL PROBLEMS AND CHANGES

The problems which confronted the industry during 1941 unquestionably will be multiplied in 1942, and throughout the war. Government co-ordination of the operations and planning of the petroleum industry is highly essential. By its very nature the oil business is so integrated from oil well to consumer that every change from normal operation in one small segment of the industry has inevitable repercussions in the other branches of the industry, perhaps thousands of miles away.

Defense and war demands have made necessary many such changes; others are bound to come. To effect them, with a minimum of disturbance to established practices and with complete fairness to all elements of

PETROLEUM

the industry, widespread cooperation and pooling of resources are necessary, and this can be done only under the active sponsorship of appropriate government agencies.

During 1941 the industry was concerned with a number of potentially serious problems, among them the threat of a deficiency of petroleum supplies on the East Coast because of the diversion of tank ships to British service. This emergency was successfully met by the adoption of many rapid changes in the normal distribution channels of the industry.

Other vital problems still confront the industry: the huge and unforeseen demands for 100-octane super aviation motor fuel; reduced supplies of raw materials for the manufacture of tetraethyl lead; the tremendous new program for the construction of synthetic rubber plants using petroleum-base raw materials; continuance of tank ship construction and proper distribution in the face of the enemy submarine menace, and the military and naval requirements for such a large proportion of the tanker fleet; efficient utilization of pipe line, tank car, and motor truck facilities; and the all-inclusive need of every branch of the industry for high priorities to assure a continuing supply of equipment and materials.

CAPITAL EXPENDITURES AND EXPANSION

To meet these and other emergencies, the petroleum industry is spending millions of dollars in new capital expenditures for new refining equipment, new pipe lines, and new tankships, along with its regular capital expansion. Shipyards turned out nearly 30 new high-speed tank ships in record time during 1941, and many more are being built or are on order for oil companies and the Maritime Commission, with completion of almost all of them scheduled for 1942 and 1943.

PIPE LINES

Two national defense pipe lines—a 250-mile crude oil line from Portland, Me., to Montreal, Canada, and a

450-mile products line from Port St. Joe, Fla., to Chattanooga, Tenn.—were completed before the end of the year, and a third products line 1,260 miles long, from Baton Rouge, La., to Greensboro, N. C., is to be completed in the early part of 1942. All of these lines traverse sections of the country where no pipe lines have ever before been laid. Together they supply the services of many tank ships and will release many hundred tank cars, and the products lines guarantee unsinkable transportation of gasoline and other petroleum products to vital Army posts and defense industries in the southeast.

REFINERY CAPACITY

Capacity of American refineries to produce 100-octane aviation motor fuel increased to roundly 50,000 barrels daily by the end of 1941, and plans sponsored by the Petroleum Coordinator call for quadrupling this huge capacity within the earliest possible time. The present capacity for this one grade of aviation fuel alone is greater than the total capacity of the rest of the world combined, and is seven and one-half times the U. S. consumption of all grades of aviation fuel as recently as 1938.

The tremendous synthetic rubber program, to build plant capacity for about 400,000 tons or one-half of the present demand for natural rubber, announced by Federal Loan Administrator Jesse Jones, undoubtedly will be based almost wholly on raw materials to be supplied by the petroleum and natural gas industry, and will call for plant construction to cost about \$400,000,000. Additional plans for the manufacture of synthetic rubber for all defense and future civilian needs are in process of formulation.

The petroleum industry already is making, or is about to make, 70,000,000 of the annual production of 100,000,000 gallons of toluene, and any further expansion in this capacity is almost sure to come from petroleum. Glycerin and industrial alcohols, particularly ethyl, also are being produced in large quantities by petroleum refineries. Plans are under way

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to develop new sources to augment the supply of lead needed to make tetraethyl lead.

In all of these fields, many of them foreign to its normal peace-time operations, the industry has taken on huge essential war jobs. Under the sponsorship of, and in partnership with, all the authorized agencies of the Federal Government having to do with petroleum, the industry is preparing cooperatively to meet every defense problem.

CRUDE PETROLEUM PRODUCTION

Crude oil production in the United States totaled 1,405,218,000 barrels, compared with 1,353,214,000 barrels in 1940, but production in the rest of the world is believed to have declined slightly to 809,399,000 from 823,548,000 barrels in 1940. The world total, therefore, gained a little less than 2 per cent to 2,214,611,000 barrels, of which the United States share was 63.5 per cent.

WORLD PRODUCTION OF CRUDE PETROLEUM

(In barrels of 42 U. S. gallons)

	United States	Rest of World	Total World
1937.....	1,279,160,000	762,878,000	2,042,038,000
1938.....	1,214,355,000	753,332,000	1,967,687,000
1939.....	1,264,962,000	811,810,000	2,076,772,000
1940.....	1,353,214,000	823,548,000	2,176,762,000
1941 (est.).....	1,405,218,000	809,399,000	2,214,611,000

Crude oil production in most states increased only slightly in 1941, and in six states—Illinois, Kentucky, Michigan, Oklahoma, Pennsylvania, and West Virginia—actually declined a little, according to preliminary estimates. The drop in Illinois, however, was not nearly as great as had been expected, from 147,647,000 barrels in 1940 to 134,769,000 barrels in 1941;

these compare with 1939 production of 94,912,000 barrels. Greatest percentage increases were in Kansas (82,986,000 from 66,139,000 barrels); Mississippi (15,547,000 from 4,400,000 barrels); and Nebraska (1,713,000 from 276,000 barrels). Mississippi, from no production prior to 1939, already has climbed to 12th place among the oil states.

U. S. PRODUCTION OF CRUDE PETROLEUM BY STATES

(In barrels of 42 U. S. gallons)

State	1939	1940	1941 (est.)
Arkansas.....	21,238,000	25,775,000	26,326,000
California.....	224,354,000	223,881,000	230,736,000
Colorado.....	1,404,000	1,626,000	1,860,000
Illinois.....	94,912,000	147,647,000	134,769,000
Indiana.....	1,711,000	4,978,000	6,536,000
Kansas.....	60,703,000	66,139,000	82,986,000
Kentucky.....	5,621,000	5,188,000	4,811,000
Louisiana.....	93,646,000	103,584,000	115,469,000
Michigan.....	23,462,000	19,753,000	16,324,000
Mississippi.....	107,000	4,400,000	15,547,000
Montana.....	5,960,000	6,728,000	7,504,000
Nebraska.....	2,000	276,000	1,713,000
New Mexico.....	37,637,000	39,129,000	39,521,000
New York.....	5,098,000	4,999,000	5,126,000
Ohio.....	3,156,000	3,159,000	3,284,000
Oklahoma.....	159,913,000	156,164,000	155,276,000
Pennsylvania.....	17,382,000	17,353,000	16,492,000
Texas.....	483,528,000	493,209,000	507,789,000
West Virginia.....	3,580,000	3,444,000	3,378,000
Wyoming.....	21,454,000	25,711,000	29,709,000
Other states*.....	94,000	71,000	62,000
Total United States.....	1,264,962,000	1,353,214,000	1,405,218,000

* Missouri, Tennessee, and Utah.

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OIL DRILLING ACTIVITY AND STORAGE

More wells were drilled in 1941 than in any years except 1920 and 1937. Of the 31,716 wells drilled in 1941, 21,834 found oil, 2,975 produce gas only, and 6,907 were barren dry holes. Many new oil fields and new producing formations at other levels in older fields were found in 1941, but no accurate data or estimates are yet available of the extent of these discoveries. In 1940, more new oil fields were discovered than in any previous year of the industry's history.

WELLS COMPLETED IN THE UNITED STATES

	Oil	Gas	Dry	Total
1937.....	23,678	2,695	6,432	32,805
1938.....	19,286	2,066	6,141	27,493
1939.....	19,045	2,198	6,474	27,717
1940.....	21,072	2,352	6,617	30,041
1941 (est.)....	21,834	2,975	6,907	31,716

Stocks of crude petroleum were reduced more than 20,000,000 barrels during 1941, ending the year at about 243,000,000 barrels, down from 264,709,000 barrels on Dec. 31, 1940.

CRUDE OIL IN STORAGE AT END OF YEAR

(In barrels of 42 gallons)

1937.....	306,826,000
1938.....	274,958,000
1939.....	239,978,000
1940.....	264,709,000
1941 (est.).....	243,000,000

FOREIGN TRADE

In 1941, for the first time since 1932, imports of crude petroleum exceeded exports. Venezuela, Mexico, and other South American countries shipped an estimated 49,834,000 barrels of crude petroleum to the United States, against U. S. exports of only 35,500,000 barrels. These compare with 1940 imports of 42,662,000 barrels and exports of 51,496,000 barrels. The decline in crude oil exports was much greater than the drop in exports of refined products.

FOREIGN TRADE IN CRUDE PETROLEUM

(In barrels of 42 gallons)

	Imports	Exports
1937.....	27,484,000	67,234,000
1938.....	26,412,000	77,254,000
1939.....	33,095,000	72,076,000
1940.....	42,662,000	51,496,000
1941 (est.).....	49,834,000	35,500,000

CRUDE OIL PRICES

Average value of crude petroleum at the well in 1941 is believed to have increased to about \$1.14 from the 1940 average of \$1.02 a barrel. The posted price of 36-degree gravity Oklahoma-Kansas crude oil, used as an index of prices, increased from \$1.02 a barrel, the price during 1939, 1940, and early 1941, to \$1.17 about the middle of 1941. This price held at the end of the year.

CRUDE OIL PRICES

(Per barrel of 36 deg. A.P.I. gravity Oklahoma-Kansas oil)

	High	Low
1937.....	1.22	1.10
1938.....	1.22	1.02
1939.....	1.02	1.02
1940.....	1.02	1.02
1941.....	1.17	1.02

PETROLEUM REFINING

The capacity of U. S. refineries, expressed in barrels of crude oil that can be processed daily, undoubtedly increased during 1941 from the record high of 4,860,194 barrels daily on Jan. 1, 1941, but no later figures are available. Of the refining capacity at the beginning of 1941, the Bureau of Mines reported that 538,381 barrels were shut down but that more than 80 per cent of this shut-down plant was in good condition.

The actual extent of new refinery construction is concealed in the year-to-year changes. From 1937 to 1941, the total operating and shut-down capacity increased only from 4,294,881 to 4,718,969 barrels daily. This gain of a little more than 400,000 barrels

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daily, however, represented the construction of 1,383,982 barrels capacity, and the scrapping of 959,894 barrels. Therefore, on Jan. 1, 1941 almost one-third of the industry's entire refining capacity was less than four years old.

The refinery construction that has been of most importance in 1941 and recent prior years, the building of new capacity for the production and processing of super aviation fuels and of toluene, glycerin, synthetic rubber, and other petroleum-base synthetics, is not even reflected in the normal refinery capacity data. The industry has spent many millions of dollars in the construction of these new plants; a recent Census Bureau report showed that in 1939 petroleum refiners spent \$111,000,000 for new plant and equipment, more than any other U. S. manufacturing industry.

Refineries produced record quantities of all major products in 1941, processing a total of 1,407,000,000 barrels of crude oil, or an average of 3,855,000 barrels a day. This compares with 1940 refinery runs of 1,294,162,000 barrels of crude oil.

CRUDE OIL RUN TO STILLs

(In barrels of 42 gallons)

1937.....	1,183,440,000
1938.....	1,165,015,000
1939.....	1,237,840,000
1940.....	1,294,162,000
1941 (est.).....	1,407,000,000

MARKETING AND STORAGE

Domestic demand for every major petroleum product reached a new all-time peak in 1941, with total U. S. consumption estimated at 1,476,110,000 barrels, the equivalent of 475 gallons for every person in the country. Gasoline, kerosene, and light and heavy fuel oil were supplied in record-breaking quantities, but the most spectacular increase was in the demand for lubricating oil, which gained nearly 30 per cent from 1940.

Exports of refined products, which suffered a major decline in 1940, dropped still further in 1941 to an estimated 70,409,000 barrels, compared with 78,970,000 in 1940 and 116,883,000 in 1939. Imports gained slightly, but were still less than 60 per cent of exports.

DEMAND FOR CRUDE OIL AND REFINED PRODUCTS

(In barrels of 42 gallons)

	Domestic	Export	Total
1937.....	1,169,682,000	172,834,000	1,342,516,000
1938.....	1,137,123,000	193,728,000	1,330,851,000
1939.....	1,231,076,000	188,959,000	1,420,035,000
1940.....	1,326,620,000	130,466,000	1,457,086,000
1941 (est.).....	1,476,110,000	105,909,000	1,582,019,000

DEMAND FOR MOTOR FUEL

(In barrels of 42 gallons)

	Domestic	Export	Total
1937.....	519,352,000	38,306,000	557,658,000
1938.....	523,003,000	50,109,000	573,112,000
1939.....	555,509,000	44,638,000	600,147,000
1940.....	589,400,000	25,377,000	614,777,000
1941 (est.).....	660,273,000	23,570,000	683,843,000

DEMAND FOR DISTILLATE FUEL OIL

(In barrels of 42 gallons)

	Domestic	Export	Total
1937.....	116,841,000	30,129,000	146,970,000
1938.....	117,449,000	29,641,000	147,090,000
1939.....	134,973,000	32,020,000	166,993,000
1940.....	160,851,000	19,140,000	179,991,000
1941 (est.).....	174,487,000	16,300,000	190,787,000

PETROLEUM

DEMAND FOR RESIDUAL FUEL OIL

(In barrels of 42 gallons)

	Domestic	Export	Total
1937	325,514,000	15,304,000	340,818,000
1938	290,065,000	17,920,000	307,985,000
1939	323,488,000	17,485,000	340,973,000
1940	340,163,000	16,109,000	356,272,000
1941 (est.)	380,000,000	14,000,000	394,000,000

DEMAND FOR KEROSENE

(In barrels of 42 gallons)

	Domestic	Export	Total
1937	54,972,000	8,886,000	63,858,000
1938	56,360,000	7,504,000	63,864,000
1939	60,503,000	8,241,000	68,744,000
1940	68,776,000	3,374,000	72,150,000
1941 (est.)	69,380,000	2,512,000	71,892,000

DEMAND FOR LUBRICATING OIL

(In barrels of 42 gallons)

	Domestic	Export	Total
1937	23,323,000	10,975,000	34,298,000
1938	21,233,000	9,417,000	30,650,000
1939	23,713,000	11,881,000	35,594,000
1940	24,690,000	10,461,000	35,151,000
1941 (est.)	31,546,000	9,100,000	40,646,000

FOREIGN TRADE IN REFINED PETROLEUM PRODUCTS

(In barrels of 42 gallons)

	Exports	Imports
1937	105,600,000	29,673,000
1938	116,474,000	27,896,000
1939	116,883,000	25,965,000
1940	78,970,000	41,089,000
1941 (est.)	70,409,000	43,715,000

Motor fuel consumption mounted to 27,700,000,000 gallons in 1941, with more motor vehicles than ever before on the roads, and with the average motorist driving farther. Motor vehicles registered or in use at any time during 1941 reached the tremendous total of 34,635,000; about 31,600,000, it is estimated, were in use at the end of the year.

MOTOR VEHICLE REGISTRATION AND USE

	Bureau of Public Roads				A. P. I. Estimated Total Vehicles In Use End of Year
	Official Registration	Publicly Owned Vehicles	Automotive Dealer Plates	Total Vehicles	
1939	30,615,087	394,783	142,034	31,151,904	28,613,000
1940	32,025,365	427,496	152,085	32,604,946	30,010,000
1941 (est.) ..	34,000,000	475,000	160,000	34,635,000	31,600,000

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Demand for distillate, or light, fuel oil continued its rapid climb, reaching 174,487,000 barrels. Nearly 75 per cent of the light fuel oil is used by oil burners in homes, the remainder finding a market as diesel oil or in manufacturing. The number of domestic oil burners in use at the end of 1941 is estimated at 2,303,000, compared with 2,162,800 on Dec. 31, 1940.

NUMBER OF OIL BURNERS IN OPERATION AT END OF YEAR

	Domestic	Industrial	Total
1937.....	1,543,800	115,700	1,659,500
1938.....	1,688,500	129,700	1,818,200
1939.....	1,909,900	146,300	2,071,500
1940.....	2,162,800	167,000	2,306,900
1941.....	2,303,000	201,000	2,504,000

Although stocks of crude petroleum declined by more than 20,000,000 barrels in 1941, stocks of refined products gained slightly. At the end of the year they amounted to an estimated 304,177,000 barrels, compared with 1940 year-end stocks of 299,875,000 barrels.

REFINED PRODUCTS IN STORAGE AT END OF YEAR

(In barrels of 42 gallons)

1937.....	259,164,000
1938.....	280,962,000
1939.....	285,860,000
1940.....	299,875,000
1941 (est.).....	304,177,000

ESTIMATED ANNUAL COST OF MOTOR FUEL AND TAXES TO CONSUMERS

(based on average number of motor vehicles in use each year)

	Annual Consumption per Vehicle (gallons)	Price of Fuel	Cost of Taxes	Total Cost to Consumer
1920.....	500	\$148.70	\$ 0.45	\$149.15
1925.....	502	100.85	10.59	111.44
1933.....	625	77.56	33.81	111.37
1938.....	701	98.63	38.13	136.76
1939.....	733	97.56	39.88	137.44
1940.....	752	95.88	42.56	138.44
1941 (est.).....	800	106.40	47.44	153.84

PRICES AND TAXES

Prices of petroleum products, measured by government and industry indexes, increased slightly in 1941, but remained far below the comparable indexes of other essential commodities and services. The index of petroleum wholesale prices of the Bureau of Labor Statistics averaged 57.2 for the first 10 months of 1941, compared with the 1940 average of 50.0. The Bureau's average index for all commodities, however, rose to 87.1 in 1941 from 78.6 in 1940.

INDEX OF WHOLESALE PRICES

(1926 = 100)

(U. S. Bureau of Labor Statistics)

	Petroleum Products	All Commodities
1937.....	60.5	86.3
1938.....	55.9	78.6
1939.....	52.2	77.1
1940.....	50.0	78.6
1941 (10 mo.)....	57.2	87.1

The average motor vehicle operator used 800 gallons of motor fuel in 1941, which cost him, on the average, \$153.84. Nearly one-third of this cost, however, went to tax collectors, the equivalent of a sales tax of more than 40 per cent. Price of the motor fuel was only \$106.40, but state and Federal gasoline taxes added \$47.44 to the cost.

PERIODICAL PUBLICATIONS

The average retail price of motor fuel in 50 representative U.S. cities increased slightly in 1941 to 13.30 cents a gallon, up from 12.75 cents

in 1940, but almost exactly equal to the 1939 price. The average tax, however, jumped from 5.44 cents in 1939 to 5.93 cents in 1941.

The petroleum industry and its customers paid a 1941 tax bill that amounted to \$1,825,000,000, an increase of \$325,000,000 from 1940. Nearly three-fourths of this huge levy—\$1,335,000,000 in 1941—comes from the state and Federal gasoline taxes paid by motorists. The state gasoline tax bill rose \$100,000,000 from 1940 to an estimated \$965,000,000 in 1941, while the Federal Government's levy of 1½ cents a gallon brought in \$370,000,000, an increase of \$90,000,000 from 1940.

MOTOR FUEL PRICES, TAXES, AND COSTS

	Average Retail Price	State and Federal Taxes	Average Total Cost Per Gallon to Consumer
1920	\$.2974	\$.0009	\$.2983
1925	.2009	.0211	.2220
1933	.1241	.0541	.1782
1938	.1407	.0544	.1951
1939	.1331	.0544	.1875
1940	.1275	.0566	.1841
1941	.1330	.0593	.1923

GASOLINE TAXES PAID BY CONSUMERS

	State	Federal	Total
1937.....	\$756,930,000	\$203,025,380	\$ 959,955,380
1938.....	766,853,000	200,881,000	967,734,000
1939.....	816,433,000	215,217,000	1,031,650,000
1940.....	864,472,000	281,654,000	1,146,126,000
1941 (est.).....	965,000,000	370,000,000	1,335,000,000

PERIODICAL PUBLICATIONS

American Gas Journal
53 Park Place, New York City.

American Mineralogist
U.S. Geological Survey, Wash-
ington, D.C.

*Chemical and Metallurgical Engineer-
ing*
330 West 42nd Street, New York
City.

Coal Age
330 West 42nd Street, New York
City.

Engineering and Mining Journal
330 West 42nd Street, New York
City.

Fueloil Journal
420 Madison Ave., New York City.

Iron Age
100 East 42nd Street, New York
City.

Metal Industry
116 John Street, New York City.

Metal Progress
7016 Euclid Ave., Cleveland, O.

Metals and Alloys
330 West 42nd Street, New York
City.

Mining and Metallurgy
29 West 39th Street, New York
City.

National Petroleum News
1213 West Third Street, Cleveland,
O.

Natural Gas
4 West Seventh Street, Cincin-
nati, O.

Oil and Gas Journal
114 West Second Street, Tulsa,
Okla.

Oil Weekly
3301 Buffalo Drive, Houston, Tex.

Petroleum Engineer
701 Allen Building, Dallas, Tex.

Petroleum World
Bendix Building, Los Angeles, Calif.

Steel Facts
350 Fifth Ave., New York City.

XII. MINERAL INDUSTRIES

COGNATE SOCIETIES AND RESEARCH INSTITUTIONS

(For further information, the reader may address the following organizations)

AMERICAN ASSN. OF PETROLEUM GEOLOGISTS, Box 1852, Tulsa, Okla.	AMERICAN MINING CONGRESS, 841 Munsey Bldg., Washington, D.C.
AMERICAN GAS ASSN., 420 Lexington Ave., New York City.	AMERICAN PETROLEUM INSTITUTE, 50 West 50th St., New York City.
AMERICAN INSTITUTE OF MINING & METALLURGICAL ENGINEERING, 29 W. 39th St., New York City.	AMERICAN PETROLEUM INDUSTRIES COMMITTEE, 50 W. 50th St., New York City.
AMERICAN IRON AND STEEL INSTITUTE, 350 Fifth Ave., New York City.	AMERICAN ZINC INSTITUTE, 60 E. 42nd St., New York City.

DIVISION XIII

MANUFACTURES AND TRANSPORTATION

CONDITIONS IN MANUFACTURING

By L. SETH SCHNITMAN
CONSULTING ECONOMIST

INDUSTRIAL PRODUCTION UNDER WAR IMPETUS

In the kaleidoscope of swift-moving events between the fall of France in June 1940 and the Japanese treachery at Pearl Harbor in December 1941 is to be found the all-absorbing saga of an industrial tempo never before attained. Not strange, this, for such is America which can rise to any occasion, more so when its system of life is threatened by the conniving cunning of a small band of international gangsters.

Unequaled in the history of man, the productive record of 1941 will long shine as a beacon of liberty. To be truly effective, it must serve, too, as a lighthouse to guide American industry and labor to havens of safety after the turbulent waters of war will have spent their madness. For it is one thing to shatter production records under the pressure of war, threatened and real; another, to sustain record employment of men and facilities under conditions that will one day come with peace.

How challenging is this question can best be outlined by the index of industrial production (manufacturing and mining) of the Board of Governors of the Federal Reserve System. In 1941, this index, taking the average for the five-year period, 1935-1939, as 100, reached a level of 156, or 56 per cent above the average for the base period. More striking, the 1941 production performance by our mines and factories was 38 per cent greater than in 1937, 170 per cent greater

than in the depression year 1932, and about 42 per cent greater than in 1929.

For manufacturing lines alone, the 1941 output was some 61 per cent ahead of the average for the base period, 31 per cent greater than in 1940, 42 per cent larger than in 1937, almost three times as great as in 1932, and 46 per cent greater than in 1929.

DURABLE MANUFACTURES

No single yardstick so outlines the course of activity in heavy industry and hence so delineates the chief incidences of the defense effort in our current production scheme, as does the index of durable goods production compiled by the Board of Governors of the Federal Reserve System.

Taking the five-year period, 1935-1939, as 100, this index registered a reading of 194 for 1941 as a whole, a gain of 94 per cent over the base period, an increase of almost 44 per cent over 1940, of 80 per cent over 1939, of almost 60 per cent over 1937. On this same standard, the output of durable manufactured goods in 1941 was almost five times as great as in 1932, the nadir year of the recent depression and, more significantly, about 46 per cent greater than in what for long has been dubbed "the boom year of 1929."

More, the December 1941 productive rate of durable goods manufactures, embracing such industries as iron and steel, lumber and its products, machinery, non-ferrous metals, stone, clay and glass products, aircraft,

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shipbuilding, automobiles, was about 112 per cent greater than the average for the base period, 1935-1939; practically 30 per cent higher than in December 1940; and fully 50 per cent greater than the all-time monthly highwater marks recorded for June and July of the lush year, 1929.

NON-DURABLE MANUFACTURES

Besides durable manufactures, the conduct of life itself presupposes supplies of consumable or non-durable manufactures, running the gamut from foods to clothing, from alcoholic beverages to tobacco products, from coal and petroleum products to rubber and paper products. Small wonder, then, that the hectic activity of 1941 in the durable goods lines should have percolated down through the manufacturing processes of the non-durable goods industries. Taking the 1935-1939 average as a base for measurement, the 1941 volume of production of non-durable manufactures recorded an index of 135. This represented an advance of 35 per cent over the average output in the base period; a gain of about 20 per cent over 1940; of 25 per cent over 1939; of 27 per cent over 1937; of 93 per cent over 1932; of 45 per cent over 1929. But for the ever-widening incidences and impactions of priorities and allocations as the events of the year sped on, the record for non-durable goods

PRODUCTION INDEXES FOR DURABLE AND NON-DURABLE MANUFACTURES*

Year	Durable	Non-durable	Ratio:
			Durable Non-durable
1919	84	62	1.35
1920	93	60	1.55
1921	53	57	.93
1929	133	93	1.43
1932	41	70	.59
1933	54	79	.68
1937	122	106	1.15
1939	108	108	1.00
1940	135	113	1.19
1941	194	135	1.44

* With ratios for specified years—Basic data from board of governors of Federal Reserve System. 1935-1939 average = 100.

production in 1941 doubtless would have been even more striking.

What these impactions have been may perhaps be inferred from contrasts between the productive rates for durable and non-durable manufactures taken for significant years over the 23-year period from 1919 to 1941 as presented in the foregoing table.

Though the reasons for the differences indicated between the specified years be many and varied, the ratios given in the table tell a striking story of alternations between economic dislocations and their ultimate adjustments.

FOOD AND TOBACCO PRODUCTS

The manufacture of food products in 1941 exceeded all earlier records, in part due to the increased civilian demand, in part due to the requirements of our military, in part due to export demand arising out of lease-lend arrangements with our allies, notably in the dairying and canning industries.

With constrictions tightened on materials and supplies, especially as to tin and steel for containers and in respect to food manufacturing machinery and dairying equipment, food processors turned their attention to a study of substitute materials, to reconditioning of existing machinery and equipment, and to new techniques of production with the result that 1942 is likely to witness not only new packaging but also new formulations in foods that ultimately may well revolutionize the American diet.

Tax-paid withdrawals of cigarettes continued to score further increases in 1941, once again scaling earlier records. Cigar manufacturing and sales also gave good accounts of themselves, while manufactured tobacco exceeded the volume for any recent year by a comfortable margin.

TEXTILES, SHOES, AND APPAREL

As in manufactured foods, the output of textiles in 1941 reached a pitch never before attained. For cotton goods alone, the 1941 production volume was probably not far from 12,000,000,000 square yards, and an in-

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crease in excess of 20 per cent over the 1940 total for a volume believed impossible of realization only a few years back. Even this total is likely again to be topped in 1942, not so much because of any material increase in the proportion to the total of around 30 per cent going into direct and indirect military uses—into such things as sheeting, shirtings, underwear, uniforms, cable insulations, drills for shoe linings, ducks for Jeep cars and trucks, tarpaulins—as because of probable increase in civilian demands growing out of enlarged purchasing power and even needed substitutions for other more limited textile fibers. What expansion may occur, however, will be hampered by limitations both within and without the production processes. Of these, lack of available labor supply; lack of adequate housing for workers on extra shifts; lack of integration of spinning equipment—much the slower of the two—to the weaving equipment are the most important considerations which will likely operate as something of a ceiling over further significant gains.

For woolen goods, too, 1941 was a banner production year, the volume exceeding the 1940 total by roughly 35 per cent. A much heavier proportion of the 1941 total than in the case of cotton goods, perhaps as much as 45 per cent, went into military uses. Rayon scored still further advances in its spectacular climb on the production ladder, reporting a gain in filament yarns in excess of 15 per cent and in staple fiber of around 50 per cent.

Silk goods production, victim of the war in 1941, fast became something of a lost art to be rediscovered perhaps at the end of hostilities with Japan, the principal source of our raw supplies.

Even burlap and jute products in 1941 reached a productive tempo never before seen, but impactions arising from our involvement in the war are likely to leave their mark in deficient supplies in the Far East and lack of bottoms to bring them here from Calcutta.

Never before have so many shoes been produced in a single year as in 1941, never before so much work clothing, so much underwear, so much outerwear, so much hosiery, so much millinery, so many hats, so many units of fur garments and gloves. For the reasons, suffice it here only to indicate that, when the American consumer is given the purchasing power to translate his unending desires for more and better things into items he can feel and touch, he does so with gusto and alacrity, to which fact the 1941 figures on retail trade eloquently attest.

PETROLEUM AND REFINERY PRODUCTS

The war extended the dislocations suffered by the petroleum industries in 1940. Yet, 1941 was able to establish new peaks for both production and demand in practically every phase of the industry from well to refinery to ultimate user. Demands for motor fuel, kerosene, distillate fuel, residual fuel, and lubricating oils registered wide gains which were reflected in increased refinery operations. Only export demands, both for crude and refined products, suffered shrinkage because of loss of markets which war had swept away.

Aviation gasoline alone showed an increase in production of more than one-third over the 1940 total; lubricating oils recorded an advance of around 30 per cent; gasoline, an increase of some 13 per cent.

With virtual stoppage in new car production in 1942 and stringent allocations in force on rubber tires, it is all but certain that the domestic civilian demands for gasoline in 1942 will be seriously curtailed. Such is war and such the dislocations it creates. It is in this relationship that the figures on gasoline tax collections by the state and Federal governments are of more than passing interest. For 1941 these amounted to almost \$1,350,000,000, of which about \$975,000,000 went into state treasuries and about \$375,000,000 went to the Federal cash-box.

At a time when new taxes are certain any shortening in the tax base

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on gasoline must mean a lengthening in the tax rate only to maintain gasoline tax revenues at the 1941 level. The curtailment orders on gasoline consumption on the Eastern seaboard in the summer of 1941 represented still another facet of the problem of war dislocations. These had their origin in the diversion of a sizable number of tankers to the British and to the Russians because of which the flow of gasoline to East Coast users was threatened.

ELECTRIC UTILITIES

Without power to run our machines, the spectacular performance of industry in 1941 would have been impossible. Small wonder then that the output of electrical power by our utility companies should have recorded an increase of some 16 per cent over the record volume for the preceding year; this to say nothing of the substantial gains in output by manufactures and mining companies who produce some or all of their own electric power requirements. Altogether the output of electrical energy in 1941 available to the public aggregated some 168,000,000,000 kilowatt hours as contrasted with about 145,000,000,000 kilowatt hours in 1940.

Sales of electrical energy to industry alone advanced by about 30 per cent; it is this class of user that is making the wheels of the economic engine whirl at speeds never before witnessed; and it is on the electric utility companies that the burden of supplying the growing needs for power in furthering our war effort must still devolve. That some "power pinches" may develop in 1942, as indeed it did in the Southeast in the summer of 1941 because of drought and low water, is possible what with the increased burdens upon the power industry. That these will prove to have been serious bottlenecks, however, is to be seriously doubted for 1942, particularly since a net increase in generating capacity of at least 3,500,000 kilowatts is all but assured, which, when realized, would mean a total capacity of not much below 48,000,000 kilowatts.

RAILROADS

The nation's railroads in 1941 moved upwards of 470,000,000,000 ton-miles of freight of every description, a total never equaled before. This is as it should have been in the light of the nation's unexampled production schedules; surely goods produced are of little utility unless moved to points of consumption.

Besides, railhauls in 1941 were generally longer than in recent years, in large measure because of increase in the military establishment at distant points, not to mention the rising tendency toward industrial decentralization in the locating of new plants. Railroads were conditioned for the tasks of 1941, for early in the defense program they had undertaken expansion in their rolling stock and improvements on their lines. In 1940, they spent some \$1,316,000,000 on maintenance; in 1941, almost \$1,600,000,000. In 1940 they placed orders for locomotives, cars, and materials valued at approximately \$825,000,000; in 1941, about \$1,250,000,000.

And the railroads early caught the meaning of priorities as applicable to materials and equipment they customarily buy. Hence, during the 1941 fall peak, when they handled more than 920,000 cars weekly, they did so, handily, only because of fuller loading and improved employment of plant generally, need for which they anticipated.

What the railroads did in 1941 should be reassuring as to 1942 when, with increased and most modern facilities, they will be called upon to move perhaps as much as 20 per cent more freight and countless additional millions of passengers inclusive of the military, now that travel by automobile is likely to be materially curtailed because of allocation as to rubber tires and rationing as to new passenger automobiles.

IRON AND STEEL

Keynoting our defense program—more lately, our war effort—the steel industry not unexpectedly played a dominant role in 1941 in setting the

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pattern and giving it substance. Never before in history had we produced 83,000,000 tons of steel; never before had its uses been so widespread and so varied in the production of the implements of war; never before had its importance to national existence been so transcending. Topping by some 25 per cent the previous high-water-mark of about 67,000,000 tons established in 1940, it is still to the steel industry that all thoughtful minds must turn for answer to the all-absorbing riddles: How long, war? How sure, victory? How safe, freedom?

Where only yesterday corn grew, now tanks multiply on a production line. But for steel, such alchemy could not occur. Of the 1941 steel production, somewhat more than half may be said to have represented the demands of the military, direct and indirect, leaving to ordinary civilian needs less than their wonted demands in more ordinary times. Even a step-up in productive capacity to an anticipated 90,000,000 tons, can not relieve the pressures on civilian uses so long as war needs obtain. It is this consideration which primarily necessitated early establishment of "priorities" which, as 1941 progressed, became increasingly operative and effective.

Although steel takings for direct and indirect war uses are likely to be much heavier in 1942 than during 1941, the over-all production volume is likely to show no appreciable expansion, if any, for four important considerations: (1) shortage of steel scrap; (2) needed repairs and furnace relinings, always a concomitant of production when quickened to levels of virtual capacity; (3) lack of adequate supplies of some alloy materials despite virtual doubling of the capacity of electric furnaces since 1939 in which alloy steels for tanks, ships, planes, and ordnance are processed and despite a projected increase in rated steel plant capacity from 88,000,000 tons to above the 90,000,000-ton level; (4) possible lack of available Lake shipping facilities to move iron ore to new blast furnaces now

nearing completion and soon to be blown-in.

Since 1939 alone, some 6,500,000 tons have been added to the steel-producing capacity of the nation. With completion of the present expansion program, blast-furnace capacity will have increased by a comparable amount. In essence, virtually all of this increase will likely be deployed for military uses. Even speedy completion of new facilities for the production of pig iron as a substitute for scrap will do more to improve the quality of steel produced than the quantity.

Hence it should be apparent that a widespread system of allocation, much as was invoked in the case of steel plates in 1941, will be the order of the day in 1942, creating ever-narrowing lines of supplies for purely civilian uses.

COPPER

As seen from the composite index of the Board of Governors of the Federal Reserve System, the output of non-ferrous metals in 1941 was about 84 per cent greater than the average in the five years 1935-1939. Virtually without exception every item of non-ferrous metal manufacture participated in this march to higher production levels.

Never before have our copper mines, copper smelters, our fabricators, been so active as in 1941, for copper is king in the production of ammunition, ordnance, small arms, cartridge cases; king, too, in the manufacture of supplies and equipment for the electrical industry such as wire and cable for electric conduits and the myriad electrical devices, communications, even in aircraft and shipping.

The output of domestic refined copper totaled about 1,100,000 tons as against about 1,033,000 tons in 1940, this without mention of the additional tonnage from Latin America, even from Canada and Africa, which brought the aggregate 1941 domestic consumption to a figure not far from 1,575,000 tons, also a new high record. Despite this record-breaking performance, as 1942 opened, copper supplies were not large enough to meet the

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known demands of our all-out war effort. Only a 168-hour work week at all points in the productive process and the reopening of many marginal operations can be counted on to relieve this pressure, especially since 1942 promises new demands for copper from new ammunition brass factories just completed and still under construction.

OTHER NON-FERROUS METALS

Aluminum, zinc, and lead, also, reached previously unattained production heights in 1941. Consider aluminum which since 1938 assumed a stature that in peacetime might have taken a generation to develop. Aluminum production in 1941 approximated 800,000,000 pounds, a volume believed impossible only a few years back, with indications that in 1942 production will cross 1,200,000,000 pounds. This, though the industry has been utterly shorn of civilian markets, all of its production going into such items as aircraft, warships, anti-aircraft guns, pontoon bridges, mobile field kitchens and communication equipment.

Or, consider the many other non-ferrous metals which figured prominently in the defense and war effort and which chalked up impressive production and consumption records in 1941. Of these, the alloy metals and minerals—tungsten, nickel, cadmium, silicon, vanadium, chromium, cobalt, manganese, molybdenum—played stellar roles in the manufacture of the hard steels needed for armor plate, for gun barrel linings, armor-piercing bullets, high-speed machines and precision machine tools. Of nickel alone, the United States consumed in 1941 upwards of 65 per cent of the entire world's supply; of tin, upwards of 45 per cent. Tin consumption in 1941 totaled 100,000 tons against only about 74,000 tons in 1940. With the completion of a government-owned tin smelter at Texas City, Tex., low-grade Bolivian ores will go a long way to relieve the otherwise tight supply situation aggravated by the outbreak of hostilities in the Pacific.

For 1942, the flow of supplies of the

imported metals generally will be seriously impeded by the spread of the arena of war, for it is to the Orient and the East Indies, to Malaya, that we have had to look for such items as chromium, tungsten, manganese, and tin. The constrictions which the Japanese aggression have brought are already operating to speed up for some of these strategic metal items the development of our own low-grade ore deposits at home and low-grade deposits in South America.

Mercury production in 1941 exceeded anything ever seen before, chalking up a total of about 43,500 flasks of 76-pounds each as contrasted with about 37,700 flasks in 1940. Strategic metal that it is, steps have been taken to increase domestic supplies, largely from marginal mines, now that imports from all foreign sources except Mexico have been cut off by the extension of the area of conflict.

AUTOMOBILE PRODUCTION

Long a weathervane of economic winds, the automobile industry in 1941, if units of production alone are considered, failed fully to participate in the general productive tempo of the year. But if the results of diversions of plant capacity and facilities to such things as aircraft engines, tanks, gun carriages and the like are viewed, quite another picture opens up. Yet, even in terms of automobile units produced during the year, the total of some 5,100,000 cars and trucks was a performance which bested that for any other year in the history of the industry, save only 1929. It is this fact that sharply delineates the 1942 automobile outlook, for, with virtually complete diversion of plant capacity and equipment to producing the essentials of war, automobile production will doubtless shrink to a level lower than any seen in at least 30 years.

Such a transformation, though it involves many costly dislocations, will take but a few short months to effect. When effected, the great peacetime automobile industry will have become

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an arsenal for the implements of war that will stagger the imagination.

What this will mean is a total of arms production of all descriptions by automobile manufacturers of perhaps \$5,000,000,000 as contrasted with only about \$850,000,000 as the industry's contribution to the war effort during 1941. If victory is to come in 1942 or even later, the assembly lines of our automobile plants will have much to do with it, for upon them will devolve heavily the job of providing bomber fuselages and parts, engines, propellers, flight-control apparatus, tanks and tank parts, military cars and trucks, aircraft cannon and anti-aircraft guns, machine guns, even shells, cartridge cases, and other ordnance.

AIRCRAFT AND SHIPBUILDING

It is in the air that America has come to look for a successful answer to its war effort. Hardly more need be said in the light of Pearl Harbor, Wake Island, Guam, Midway, and the Philippines, even Hong-Kong, Malaya, and Singapore. If additional earnest be needed, the President offered it in his message to Congress in the opening days of 1942 when he called for a 1942 production of 60,000 military planes of every description against a probable out-turn for 1941 of around 20,000 units. Though aircraft and engine-manufacturing floor space was increased by some 90 per cent in 1941, further sizable expansion will be undertaken in 1942 to insure a constant stepping-up in the production schedules of aircraft manufacturers. As 1941 closed, some 425,000 individuals were engaged in the construction of planes, engines, and parts in aircraft factories as against only about 193,000 as the year opened. By the end of 1942, plants still building and new ones projected will expand the employee rolls to a figure in excess of 600,000.

As important as are planes, mercantile and naval ships played their part in shaping the 1941 defense pattern. As a result, domestic yards, with many new shipways laid down in 1941, are now equipped to produce not far from 8,000,000 gross tons of merchant

bottoms in 1942. All this, in addition to dozens of naval craft—submarines, destroyers, cruisers, chasers, patrol boats, mine sweepers, aircraft carriers, battleships, torpedo boats—will slide down the ways in the quickened tempo since Pearl Harbor.

BUILDING CONSTRUCTION AND MATERIALS

Expansion in productive activity to all-time highs could hardly have occurred without new factory space, nor did it. Never before did new factory building operations reach the heights recorded in 1941, more than double the total in 1940. With this came gains as well, though less spectacular, in other structural types notably in residential building. At the same time emphasis on defense constricted the volume of such construction as schools and other even less essential building types.

The year's construction picture embraces these important phenomena: (1) projects of great size, oftentimes in localities that under peacetime conditions might never have been selected as sites; (2) large migrations, civil and military, requiring housing and community facilities; (3) huge amounts of off-continent construction for such items as air and naval bases; (4) unexampled demands for processing machinery and equipment.

Industries feeder to the construction industry—lumber, cement, plywood, asphalt roofing, paint, glass, brick, hardware, gypsum, plumbing, heating, to mention but a few—generally enjoyed larger production and sales schedules, too, than at any time since the 1920s, some even exceeding the records of those years. For lumber, age-old building material, 1941 production exceeded 32,000,000,000 feet as contrasted with about 29,000,000,000 feet in 1940. For plywood, not so long ago only a lusty infant, the 1941 output of around 1,800,000,000 square feet shattered all earlier records, with more than 60 per cent of the year's output going into defense uses such as defense housing, plane fuselages, stabilizers, and wings, trainer planes, mine sweepers, skis, torpedo boats,

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pipe-chemical vats, shipping containers, even cargo vessels and army landing boats.

As 1941 drew to a close, evidences were not wanting that as to many building materials, especially those of metal, the all-prevailing questions of priorities and allocations will in 1942 materially contract all non-necessitous or non-defense construction. For industrial building, however, the stride set in 1941 may likely again be duplicated in 1942.

MACHINERY AND EQUIPMENT

Regardless of what may be in store for construction generally and irrespective of the virtual certainty of a drastic curtailment in private residential building, machine tool production in 1942 promises again, as in 1941, to shatter all earlier figures.

Machine tool builders early caught the war tempo, having lived with it since September 1939 when they were called upon to supply some of the more pressing needs of the British, even of the Japanese.

How phenomenal has been the production increase of the machine tool industry is best illustrated by a contrast between 1932 and 1941; about 22,000,000 then, virtually \$800,000,000 in 1941, and probably in excess of \$1,000,000,000 for 1942.

This will be accomplished in part by additions to floor space, in part by probable extension of the 168-hour week to the entire industry, in part because of increased worker efficiency, in part by an extension of sub-contracting both to the small machine shop and to manufacturers who are household names in other fields, notably in electrical manufacturing lines, can, printing machinery, and elevator manufacturers, even carpet mills. Lathes, planers, grinders, gear cutters, milling machines, no matter who makes them so long as they are precision-built and are produced fast enough to implement the men behind the men behind the guns.

EMPLOYMENT AND WAGES

Without human hands and minds to guide and direct them our machines

would be useless. So it is that labor, all-out labor, is the very spearhead of this most modern of all modern warfare. Besides pitting gun against gun, plane against plane, tank against tank, this war is really a contest of our industrial plant against the industrial plant of the enemy. If the year 1941 may be said to have awakened the nation to this concept, it remained only for Pearl Harbor to cement it. And thus, because industrial output was so large, as 1941 closed, factory employment generally was greater and at higher wages than ever before in our history; loss of time because of strikes was virtually non-existent, though the year as a whole was visited by the most turbulent period of industrial strife in its entire history and though in April 1941 alone more than 7,000,000 man-days were lost through strikes or lockouts.

If problems there be for 1942, they are likely to be found elsewhere, to list but five: (1) lack of skills at needed points; (2) difficulty in supplying quickly the workers needed to replace those involuntarily displaced by the draft; (3) difficulty in absorbing workers terminated because of shortages of materials; (4) lack of competent supervision, now that the nation's arms plant is not only speeded by enlarged facilities but also by the extension of the work-week to a 7-day, three-shift basis; (5) temporary unemployment occasioned by conversion of plants to war work such as in the automobile industry.

CONCLUSION

Some day the exciting annals of this war will be written. It will tell of shortcomings, yes, but it will record as well many miracles in production and transition in the factories of America—of expanded uses for cotton, paper, aluminum, chemicals, explosives, rubber, and the myriad commodities on which American genius ever is at work. It will tell of locomotive manufacturers who built tanks and gun carriages; of bird-cage manufacturers who produced cartridge-

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clips; of refrigerator manufacturers who supplied parts for aircraft; of farm-implement factories that produced combat wagons, gun mounts, and carriages; of pipe-organ manufacturers who produced saddle frames; of radiator and boiler manufacturers who fashioned shell-cases and cannon; of business machine manufacturers who produced heavy ordnance and portable kitchen equipment; of plywood manufacturers who built trainer planes; of roofing companies who loaded shells.

And when the story is written a large tome will tell of the heroic efforts of government in its fight on the forces of inflation, always concomitants of a major war; of a system of allocations and allotments that in its workings made man, woman, and child conscious of the material sacrifices that must be made in a war of liberation from the sinister forces without our borders.

However written, it will relate how much more costly would have been our war effort, in money alone, had not price controls been early conceived and methodically administered; how impossible it would have been quickly to supply all needs for war without curbs on buying and spending habits of the population; how empty would have been the victory that must be ours in this rendezvous with destiny had we permitted unconscionable profits to the few at the expense of the many.

Still the larger story remains. Lest we be visited with industrial chaos when all the shooting is over, that story must tell of a relatively painless transition from a wartime economy to a peaceful life that is our just need in the conduct of which our enlarged industrial plant will have become the broad avenue for a living standard paling anything before in the history of man.

THE UNITED STATES TARIFF COMMISSION

By RAYMOND B. STEVENS

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INTRODUCTION AND SUMMARY

In the 25 years that have elapsed since the creation of the Tariff Commission in September 1916, its activities, affected as they are by both national and international developments, have varied greatly from year to year. At no other period in its history, however, have international developments caused so great a change in the Commission's activities as during 1941.

The territory now occupied or controlled by the Axis Powers, including Japan, accounted in 1938 for about 40 per cent of the total international trade. Trade relations between this

territory and the remainder of the world have been largely disrupted. The trade of the United States with the Axis countries and the areas now occupied by them, representing (1938) about 25 to 30 per cent of its total foreign trade, has now been entirely cut off. As a result, the United States has been forced, as have other non-Axis countries, to look to new sources of supply for certain varieties of goods or for substitutes for them.

The situation thus created has been intensified by the fact that war-time conditions and defense preparations have greatly increased the demand for many types of products. Under these

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circumstances, the governmental policies of many countries with regard to foreign trade have undergone radical change. In the past, such policies were usually directed, on the one hand, toward maintaining or increasing exports, and on the other, toward protecting domestic industries from too severe foreign competition. At present, however, exports are regulated, even prohibited, lest defense efforts be impaired by the sale abroad of essential products. Moreover, governments are directing their efforts to a large extent, not toward restricting imports, but toward securing greatly increased quantities of foreign goods needed for national defense or for maintenance of the civilian economy. For this reason, among others, tariff rates have become temporarily of less significance in the movement of goods in international trade than they formerly were. Furthermore, tariff structures created under other circumstances are frequently unsuited to the import and domestic-price policies now being pursued.

COOPERATION IN THE DEFENSE PROGRAM

Because of these conditions the Tariff Commission during the past year found it necessary to shift the emphasis of its work. There was a heavy demand upon its services by agencies administering the defense program because of the special trade problems arising in a war economy. In its defense work, the Tariff Commission operates under a specific authorization, contained in Section 334 of the Tariff Act of 1930, for cooperation with other government agencies. The marked increase in the requests for assistance made to the Commission under this section added greatly to the work of the Commission in 1941, at times overtaxing its staff. And work relating to the national defense program predominates in the activities of the Commission at the present time.

One reason the Commission has been drawn upon so extensively for assistance in the present emergency is that it has gathered, over a long pe-

riod of research and investigation, a fund of information on commodities, domestic industries, and international trade. An even more important reason, however, is that the Commission has a trained and experienced staff capable of analyzing and interpreting such information in its bearing on the many special problems which arise in the national emergency.

The Commission's work on national defense problems varies widely, but consists principally of intensive and extensive technical and economic research, cost-of-production and sales investigations, statistical compilations and analyses, and the service of its personnel on interdepartmental committees.

The following partial list of subjects on which the Commission has furnished data will indicate how diversified are the requests made of the Commission by defense agencies:

- Copper
- Long-staple cotton
- Foods
- Stock piles
- Douglas-fir-lumber industry
- Crude drugs
- Rubber
- Synthetic organic chemicals
- Mica, graphite, and other strategic nonmetallic materials
- Refractory brick
- Explosives and fertilizers
- United States-Canadian cooperation
- Wool textiles
- Raw silk and silk waste
- Cork
- Priorities
- Inventories of cost information
- Labor problems
- Manila fiber and cordage
- Factors affecting prices of certain commodities
- Petroleum refining
- Raw wool
- Army purchases of fish
- Lend-lease purchases of fish
- Lead and zinc
- Pulp, paper, and paper products
- Cooperation with the Office of Price Administration
- Studies of costs of production, prices, and profit margins
- Petroleum
- Cooperation with the Economic Defense Board
- Trade statistics
- Iron and steel
- Industrial conservation
- Cooperation with Latin America

Because of the type of information obtained and the purpose for which it is intended, results of the work done by the Commission on defense mat-

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ters are as a rule confidential, and therefore no detailed account of it can be given.

WORK ON TRADE AGREEMENTS

Besides activities in behalf of defense preparations, the Commission has continued its assistance to the Department of State in the work on the trade agreements program and its work for the Committee for Reciprocity Information. During the year beginning Dec. 1, 1940, trade agreements have been completed with two countries—a supplementary agreement with Canada, and a new agreement with Argentina, which became effective Nov. 15, 1941. Work on these agreements, however, represents only a small part of the total work on trade agreements. United States trade with practically all of the non-Axis countries has been reviewed in order to obtain the basic data for discussions of possible new trade agreements or revisions of those already negotiated. In fact, the Commission's activities on trade agreements, especially during the latter half of the year, were more extensive than usual. Negotiations are under way for a trade agreement with Uruguay, and announcement has just been made (November 1941) of intention to undertake negotiations for an agreement with Iceland.

SUMMARIES OF TARIFF INFORMATION

Fundamental to much of the work of the Tariff Commission is the compilation and analysis of data relating to the thousands of commodities which appear in the import trade of the United States. Much of this basic material has been organized in the form of summaries of tariff information. These summaries incorporate information not only from government sources but also from trade sources, much of which is obtained at first hand in the field.

In preparation for the Tariff Act of 1930, the Tariff Commission submitted to Congress summaries of tariff information, covering for each product under consideration its tariff

history, uses, domestic production and trade, and competitive conditions. The Senate in 1933 directed the Commission by resolution (S. Res. 334, 72d Cong., 2d sess.) to bring these summaries up to date and to expand them by the inclusion of such subjects as concentration of control in the foreign and in the domestic industries, advantages and disadvantages affecting the sale of domestic and foreign products, foreign production of articles subject to United States duties, and tariff problems arising from the use of substitutes. The Commission has from time to time broadened the scope of the summaries of tariff information in order to develop them in line with changing conditions, especially since the beginning of the defense program, when subjects such as strategic importance of the commodity, stocks, alternate sources of supply, and practical substitutes were added or given greater emphasis. In the revision of summaries, it has been the practice of the Commission to give first consideration to those commodities of current significance. In the past year many of these were the strategic, critical, or surveillance items with which the defense agencies have been particularly concerned.

Summaries continue to be useful in supplying the Congress with basic information on tariff matters and in providing data for the use of those concerned with trade agreements. The demand for them from government agencies has increased rapidly since the beginning of the defense program.

More than 1,700 summaries are now complete, most of them in mimeographed form, and the Commission expects to prepare approximately 300 more. The summaries have not been published as such, but information on about half of the products covered by them has been embodied in published commodity surveys and in digests of trade data.

COMMODITY SURVEYS

Since the Commission undertook in 1936 a program of issuing commodity surveys, 14 such surveys have been

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completed. These are more elaborate than the summaries of tariff information and commonly cover a group of related commodities rather than a single commodity. During the year, because of the pressure work under the national-defense and trade-agreements programs, only two of these comprehensive surveys were issued. Summaries of these follow.

Earthen Floor and Wall Tiles.—

This is an economic survey of the earthen floor and wall tile industry in the United States and in other important producing countries. It deals with fired clay tiles, dutiable under paragraph 202 of the Tariff Act of 1930, these being the most important earthen tiles imported into the United States. Covered in detail in the survey are such economic aspects of the industry as the effects of tariff on the trade in floor and wall tiles, problems in marketing (including competition from substitute materials), an analysis of production costs, and international trade in tiles. Considerable space is given to differentiating the many types of floor and wall tiles and to describing the various processes of manufacture.

In view of the restrictions now being placed on the use of certain building materials, mainly those of metal, Federal and other officials are canvassing the field of possible substitutes. Among these, clay building materials are one of the most promising groups of products. Earthen tiles offer possibilities of assistance in relieving the strain on the nation's metal supply; for example, built-in bathtubs or tile showers might be substituted for metal articles of similar use.

Hogs and Hog Products.—Late in 1941 the Commission published a comprehensive survey entitled "Hogs and Hog Products," which covers economic and competitive aspects of the domestic hog industry and the international trade in hogs and hog products. The survey relates to the commodities dutiable under paragraph 703 of the Tariff Act of 1930. It is divided into two parts, supplemented by several appendixes and a glossary.

Part I deals with the domestic industry and gives the history of hog raising, discusses the packing and marketing of pork products, and traces the rise and decline of the country's foreign trade in such products.

Part II deals with the production and trade of the principal foreign countries that import or export hogs and hog products. In most years prior to 1929, the United States exported more pork products, including lard, than all other countries combined. Changes in production and trade in these commodities in foreign countries were of great concern to hog producers and pork packers and exporters in the United States. The report does not attempt to cover conditions that have developed since the beginning of the present war.

LATIN AMERICA AS A SOURCE OF STRATEGIC AND OTHER ESSENTIAL MATERIALS

During 1941 the Commission also issued a number of other timely reports. The Commission's report on Latin America as a source of strategic and other essential materials presents basic data on production and trade for 40 selected strategic and other essential commodities which can or might be obtained in part or in whole from Latin America. For its requirements of these products, the United States is dependent, either wholly or partially, upon imports. Not all of the commodities listed as strategic have been included, in as much as certain of them can not be secured in Latin America. This is either because the natural resources required for their production do not exist there, or because the technical equipment and skill necessary to produce them are not available. Certain other commodities, though not considered strategic, have been included because they are essential in the production of industrial and defense equipment and of materials for military and civilian use. Still others were added because they are important in the diet and health of the nation.

For each commodity covered by this report, there are sections dealing

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with the position of Latin America in world production and in world exports. A section dealing with United States imports shows the position of Latin America as a supplier of this market. Sections relating to competitive conditions and prices and with the effects of the war complete each analysis. For most of the products, data on world production and world exports are not available after 1938, but statistics showing United States imports and prices are carried through the year 1940.

The foreign trade of the Latin American countries has been seriously affected by the outbreak of war. Markets in continental Europe which formerly accounted for one-third of the foreign trade of these countries are no longer open to them. The loss of markets, the scarcity of shipping, and the resulting accumulation of surpluses have depressed the prices of many products and have reduced the purchasing power of the people of Latin America. These developments are of grave concern to all the nations of the Western Hemisphere because of the mutual interest of these nations in hemisphere solidarity and their mutual dependence upon hemisphere defense. Many problems resulting from the war would be solved, at least in part, if trade between the American Republics could be expanded.

Also particularly important is the problem of post-war markets for the product of any Latin American industry, production of which is begun or expanded at this time. If, after an interruption of trade during the war, the countries that have hitherto been the main suppliers of United States imports should again become available sources, there is danger that their output, along with that developed in Latin American countries, will greatly exceed demand, and result in ruinous prices, the displacement of labor, and the loss of invested capital. Latin America would suffer from such conditions even if the costs of production of the commodity there proved to be as low as elsewhere. The situation would be especially grave for Latin

America if post-war costs of producing the commodity there should prove to be substantially higher than those of customary sources of supply. Under such conditions, competition might destroy the Latin American industry entirely unless it should be subsidized in some way. Of course, if the Latin American countries prove to be more efficient than other producing countries, they may ultimately dominate a large part of the market.

If, after the war, the United States should continue to purchase from Latin America large quantities of products hitherto imported predominantly from other sources, it would doubtless be able to export more goods to Latin America than would otherwise be possible. Under such circumstances, however, unless total trade increased, purchases from other areas would be reduced and exports to areas other than Latin America would consequently decline. The effect on total exports would depend on many circumstances which can not now be foreseen.

There are many opportunities to increase the trade of the United States with the Latin American countries in commodities which are, or can be, efficiently produced there. Trade developed on such a basis would give promise of permanence and mutual benefit. The report contains information concerning some commodities the trade in which might profitably be expanded, and indicates some that are less promising.

ITALIAN COMMERCIAL POLICY AND FOREIGN TRADE, 1922-1940

The period covered in this report extends from the beginning of the Fascist regime in 1922 to Italy's entry into the war in June 1940. During these years, sweeping changes in Italian commercial policy and far-reaching shifts in international trade occurred as a result of Italy's adoption of policies aiming at a high degree of national economic self-sufficiency and of military power.

The report is in four parts. The first

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consists of a description of the general characteristics of the Italian economy and of the main features of Fascist economic policy. This is followed by a statement of the reasons for the adoption by Italy of a system of trade and exchange controls, and a discussion of the nature and operation of such techniques of control as import quotas, import licenses and monopolies, export restrictions, and payment, clearing, and compensation agreements. The third part of the report analyzes Italian foreign trade and United States-Italian trade in recent years, and discusses the recent trade position of the eight commodities most important in United States-Italian commerce. The last part summarizes the findings of the report and discusses the results of recent Italian commercial policy. The six appendices contain the text of the temporary commercial agreement in force between the United States and Italy, detailed statistical data on the principal Italian imports and exports and on the trade between Italy and its dependencies, detailed statistics on all important United States exports to Italy and imports therefrom, and a study of Italy's price and quantity terms of trade from 1925 to 1938.

Besides discussing such topics as Italian trade policy during the Ethiopian War and the period of League of Nations sanctions, the organization and operation of the Italian trade and exchange-control system, and the recent course of Italy's foreign commerce, the report gives an account of United States trade with Italy during the last two decades and a comprehensive analysis of the principal problems that arose in the trade relations of the two countries immediately before the present war.

IMPORTS FROM JAPAN AND THEIR RELATION TO THE DEFENSE PROGRAM AND TO THE ECONOMY OF THE COUNTRY

Developments during the year caused imports from Japan to decline so sharply as to give rise to the

question of what effect a complete cessation of imports from Japan would have on the defense program of the nation and on the general economy of the country. The Tariff Commission accordingly undertook the preparation of a report on this subject. The Commission's fund of relevant material enabled it to prepare the report without delay and to release it early in September. Public interest in the subject became especially pronounced after the issuance of the President's order of July 26, 1941, freezing Japanese assets in the United States and the almost complete cessation of imports from Japan resulting therefrom.

The report covers all imports from Japan which amounted to as much as \$250,000 in 1940 or \$500,000 in the preceding year, as well as a number of other articles important for various reasons, such as for national defense. The commodities included represented about 90 per cent of total value of imports from Japan in 1940 and in the first five months of 1941.

Each commodity or class of commodities is treated in a separate section, describing the commodity and indicating its principal defense and civilian uses. The competitive situation is outlined, and there are presented the principal economic data pertinent to the problems which would be created by a complete stoppage of imports from Japan. Although the report discusses separately the classes of domestic interests (importers, defense and other manufacturing industries, workers, and consumers) that would probably be affected by such a stoppage, it emphasizes the extent to which the economy of the country as a whole would be affected. However, where the vital interests of a substantial section of the population seem likely to be affected—as by the cessation of imports of raw silk—even though no great injury appears in prospect for the country as a whole, appropriate space is devoted to a discussion of the impact of the cessation on that particular product.

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POSSIBILITIES OF PRODUCING RUBBER IN THE UNITED STATES AND RUBBER CONSERVATION

In September 1941 the Tariff Commission issued a report concerning the various methods of conserving rubber supplies and the feasibility of producing natural and synthetic rubber in the United States. At present, crude rubber is not produced in the United States, and in 1940, imports amounted to more than 800,000 long tons, valued at more than \$300,000,000. Crude rubber is used in the production of many articles necessary for civilian use and for national defense and is classified by the Army and Navy Munitions Board as a strategic material. The present emergency, particularly as regards shipping, raises the problem of rubber conservation and of producing in the United States (or elsewhere in the Western Hemisphere) both natural and synthetic rubber. The Commission had already considered the possibilities of an increase in production of natural rubber in Latin America in its report on Latin America as a Source of Strategic and Essential Materials; this report, therefore, is confined to the problem of the conservation and production of rubber in the United States.

The report points out that there are numerous methods of conserving rubber, the most important being the production of reclaimed rubber from scrap rubber and the retreading of used tires. It is estimated that at least 225,000 long tons of rubber—one-third of our annual consumption—might be saved by the increased use of these two methods. Rubber conservation alone, however, would not suffice if imports of crude rubber from the Far East were cut off or greatly reduced, particularly since stocks in the United States in September 1941 were sufficient to operate the rubber-manufacturing industry for only about eight months at the rate of consumption at that time. In recognition of this deficiency, the Reconstruction Finance Corporation has already advanced a total of \$11,000,000 to four large rubber-manufactur-

ing companies for the construction of synthetic rubber plants; far greater investments would be necessary to make possible the production of a really large tonnage of rubber. Many persons in the trade, moreover, suggest that the government should also advance funds for the production in this country of natural rubber from the Guayule plant, an indigenous rubber-producing plant that can be cultivated in certain parts of the United States.

The report gives information on the costs of producing synthetic and guayule rubber in the United States, the capital that would be required, and the time it would take to reach a substantial output. Synthetic and guayule rubber can not, under present conditions, be produced as cheaply in the United States as crude rubber can be produced in the Far East and shipped to the United States. A large capital investment and considerable time would be required to produce either synthetic or guayule rubber extensively in this country.

MISCELLANEOUS REPORTS

Besides the reports summarized in this article, some of the other material issued by the Tariff Commission during the past year are the report of United States production and sales of synthetic organic chemicals in 1939; analysis of imports of miscellaneous chemicals, 1939 and 1940; "Regulation of Imports by Executive Action"; a Spanish edition of "Reference Manual of Latin American Commercial Treaties"; the remaining volumes in the series entitled "Foreign Trade of Latin America," which was summarized in the previous edition of *THE AMERICAN YEAR BOOK*; and statistical compilations of imports from Japan and from Asia. A cumulative supplement was issued in May, bringing up to date the information in the document entitled "Changes in Import Duties Since the Passage of the Tariff Act of 1930."

SPECIAL INVESTIGATIONS

There is pending in the Commission an investigation with respect to wood pulp and pulpwood, which was ini-

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tiated in August 1939, in response to a Senate resolution. The investigation has been suspended because of the changes which have taken place in the trade in wood pulp and pulpwood since the date of the Senate resolution. However, much work has been done on this subject as the result of a request by the Office of Price Administration for a cost study of wood pulp. Another investigation requested by the Senate concerns red cedar shingles. This investigation, ordered by the Commission in June 1941, is rapidly nearing completion.

In addition to the investigations requested by the Senate, the Commission undertook an investigation of the Puerto Rican needlework industry at the request of the Administrator of the Wage and Hour Division of the Department of Labor (this investigation was later discontinued); an investigation of wheat under Section 22 of the Agricultural Adjustment Act of 1933, as amended, this investigation resulting in the placing of an annual quota on imports of wheat and wheat flour; and a supplemental investigation of cotton under the same Section 22, resulting in the President's exempting from quota restrictions imports of cotton having a staple 1-11/16 inches or longer. Another supplemental investigation was instituted by the Commission on Nov. 12, 1941,

to determine whether import restrictions may be suspended on certain cotton and cotton-waste items.

Under the so-called flexible provision (Section 336) of the Tariff Act of 1930, an investigation on crab meat was instituted and completed during the year. As a result of this investigation, the duty on crab meat was increased by Presidential proclamation from 15 per cent *ad valorem* to 22½ per cent *ad valorem*, effective Sept. 21, 1941. Work on an investigation with respect to wool-knit gloves and mittens was instituted by the Commission under Section 336, in October 1940. However, in the interval between the date the investigation was ordered and the date of the hearing, unusual conditions developed in the domestic industry, partly because of the government's defense program, and these, together with a request by the interested parties, led the Commission to suspend the investigation.

There has been little activity under Section 337 of the Tariff Act of 1930, relating to unfair practices in import trade, or under Section 338, which deals with discrimination against the export trade of the United States. This may be explained mainly by the increased tempo of defense activities in the United States and by the radical change in the character of our international relations and trade.

ADMINISTRATION OF THE TARIFF LAWS

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INFLUENCE OF WAR CONDITIONS

War conditions profoundly influenced customs activities during the fiscal year 1941. Although the collection of revenue on imports and the prevention and detection of smuggling continued to engage most of the attention of customs officers, both of these functions were largely affected by the spread of the conflict abroad

and by ever accelerating preparations for national defense at home.

New duties were also assigned to the Customs Service growing out of the relation of the United States to the belligerents and the exigencies of the defense program. All export declarations were carefully examined to determine whether the merchandise presented for exportation was duly li-

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censed by the Office of Export Control or the State Department, and whenever possible the merchandise itself was physically examined to make certain that goods subject to export license were not permitted to leave the country until appropriate license had been secured. Customs officers also participated in the enforcement of executive orders regulating transactions in foreign property in order to insure that exports to and imports from certain blocked nationals were covered by appropriate licenses as well as to enforce the prohibition of exports to or imports from persons on the proclaimed lists of certain blocked nationals. A continual watch was maintained for any evidence of sabotage, espionage, or other subversive activities.

CUSTOMS COLLECTIONS

Aggregate collections for the second successive year exceeded those of the previous year, amounting to \$429,543,784 in 1941 as compared with \$383,279,587 in 1940. Of these amounts, \$392,233,153 and \$350,851,573 in 1941 and 1940, respectively, constituted actual customs revenue while the remainder represented chiefly Internal Revenue taxes on imports of alcoholic beverages together with some items of comparatively small importance, such as tonnage taxes, head taxes on immigrants, etc.

Collections fluctuated much more widely in 1941 than during recent years, the total for April, 1941 being more than twice that for September, 1940. Collections during the earlier months of the fiscal year 1941 continued at the comparatively low level prevailing during the later months of the previous fiscal year. For six of the first seven months, customs receipts were lower than for the corresponding months of the previous year, the aggregate collections at the end of January, 1941 being 10 per cent less than for the seven months ended Jan. 31, 1940. Customs revenue rose sharply in February, 1941, however, continued upward to a peak in April, and declined only moderately during the remaining months of the year.

COMMODITY REVENUE TREND

The augmented collections were due almost entirely to large imports of unmanufactured wool and of those dutiable metals necessary for national defense. Duties on wool and wool manufactures (\$96,296,000) were more than double the total for 1940 and were considerably larger than collections from this source during any previous year for which statistics are available. Duties on metals (\$40,663,000) increased 49 per cent, due largely to a ten-fold increase over 1940 in duties collected on imports of lead, and to increases ranging from 25 to 72 per cent in the revenue on imports of manganese, nickel, aluminum, and zinc. Taxes collected on commodities free of duty under the Tariff Act but taxed by the Revenue Acts (chiefly copper and petroleum) were two and one-half times the yield in 1940. Heavy imports of dutiable lumber in the later months of 1941 also caused a small increase in duties on wood and wood manufactures.

The diminished revenue from imports of those commodities included in the remaining 12 schedules of the Tariff Act was in most instances a direct resultant of the war which prevented almost completely the exportation from Europe of many commodities previously imported into this country in substantial quantities. The decreases ranged from less than 1 per cent in the case of tobacco to 60 per cent in the case of manufactures of rayon or other synthetic textiles. Even the decrease of 10 per cent in duties on sugar was indirectly due to war conditions. The 1940 duties on sugar were much larger than usual due to importations at higher rates of duty during the period from Sept. 13 to Dec. 26, 1939, when the temporary removal during the first months of the war of the quotas established by the Sugar Act of 1937 was accompanied by the assessment of duties at rates previously in effect. In this case the larger collections of 1940 were the result of the beginning of the war, and the diminished revenue of 1941 merely a return to a more nearly normal amount.

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VALUES OF DUTIABLE AND TAXABLE IMPORTS FOR CONSUMPTION AND ESTIMATED DUTIES AND TAXES COLLECTED, BY TARIFF SCHEDULES

(Fiscal Years 1940 and 1941)

Tariff Schedule	Value		Duties and Import Taxes ¹		Percentage Increase or Decrease (-)	
	1940	1941	1940	1941	Value	Duties
1. Chemicals, oils, and paints.....	\$ 51,192,559	\$ 38,187,376	\$ 16,526,952	\$ 10,926,302	-25.4	-33.9
2. Earths, earthenware, and glassware.....	23,808,317	22,797,368	9,920,577	8,189,260	-4.3	-17.5
3. Metals and manufactures.....	93,373,880	122,262,098	27,301,938	40,663,457	30.9	48.9
4. Wood and manufactures.....	17,266,419	22,615,368	1,841,665	1,977,258	31.0	7.4
5. Sugar, molasses, and manufactures.....	110,543,434	111,991,301	57,723,437	52,192,887	1.3	-9.6
6. Tobacco and manufactures.....	36,165,617	37,304,388	22,634,415	22,558,204	3.1	-.3
7. Agricultural products and provisions	169,932,295	142,240,033	53,062,864	47,645,541	-16.3	-10.2
8. Spirits, wines, and other beverages...	62,522,790	50,095,097	37,121,626	31,004,515	-19.9	-16.5
9. Cotton manufactures	25,408,380	16,748,892	9,102,583	5,756,236	-34.1	-36.8
10. Flax, hemp, jute, and manufactures.....	62,117,209	61,599,195	10,430,813	9,379,070	-.8	-10.1
11. Wool and manufactures.....	64,350,618	142,713,481	42,690,169	96,295,765	121.8	125.6
12. Silk manufactures	4,987,905	3,365,844	2,616,091	1,786,135	-32.5	-31.7
13. Manufactures of rayon or other synthetic textiles.....	8,202,982	3,274,189	2,460,923	992,299	-60.1	-59.7
14. Pulp, paper, and books.....	9,572,453	6,850,422	1,719,837	1,088,604	-28.4	-36.7
15. Sundries.....	127,264,756	116,757,400	33,400,900	26,404,278	-8.3	-21.0
Dutiable under section 466, Tariff Act of 1930.....	275,221	367,079	273,091	304,914	33.4	11.7
Free list commodities taxable under the Revenue Act of 1932.....	52,724,328	116,390,321	11,177,787	28,141,187	120.8	151.8
Total.....	\$919,709,163	\$1,011,261,879	\$340,005,668	\$385,305,912	10.0	13.3

¹ Taxes collected on dutiable commodities under the Revenue Acts and the Sugar Act of 1937 are included in appropriate schedules.

REVENUE TREND BY COUNTRIES

Customs revenue on importations of merchandise from Europe declined to \$80,256,000 in 1941 compared with \$130,709,000 in 1940 and \$148,650,000 in 1939. More than half the 1941 total was derived from imports from the United Kingdom and 14 per cent of the total from imports of Swiss goods, the latter yielding slightly more revenue than during the previous year. Increased revenue also appeared on imports from Spain, Portugal, Bulgaria, Ireland, and the Azores, none of which was of importance as a source of customs revenue.

Customs revenue on imports from each of the other five continental areas and from almost all the countries included therein, on the other hand, was greater during 1941 than during the previous year. Duties on imports from Oceania trebled, those from South America doubled, and those from North and Central America, Asia, and Africa each increased to a small extent. Of the North American countries, Cuba and the Netherlands West Indies were of smaller importance than in 1940 as sources of customs revenue, due, in the case of the former, to the smaller collections

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VALUES OF DUTIABLE IMPORTS FOR CONSUMPTION AND ESTIMATED DUTIES COLLECTED, BY COUNTRIES

(Fiscal Years 1940 and 1941)

Country	Value		Duties		Percentage Duties to Values		Percentage Increase or Decrease (—)	
	1940	1941	1940	1941	1940	1941	Value	Duties
Europe:								
Azores.....	\$ 664,080	\$ 904,336	\$ 538,113	\$ 721,659	81.0	79.8	36.2	34.1
Belgium.....	45,506,262	10,739,431	8,578,817	1,540,181	18.9	14.3	-76.4	-82.1
Bulgaria.....	1,378,523	1,452,719	758,274	831,289	55.0	57.2	5.4	9.6
France.....	43,246,842	10,048,013	19,124,320	4,460,681	44.2	44.4	-76.8	-76.7
Germany.....	13,453,821	4,843,680	5,068,257	1,722,642	37.7	35.6	-64.0	-66.0
Greece.....	14,479,800	13,207,796	7,522,414	6,642,917	52.0	50.3	-8.8	-11.7
Ireland.....	952,765	1,268,267	533,443	698,216	56.0	55.1	33.1	30.9
Italy.....	30,919,041	4,129,280	12,747,928	1,893,694	41.2	45.7	-86.7	-85.2
Netherlands..	16,741,405	688,937	3,627,373	140,621	21.7	20.4	-95.9	-96.1
Norway.....	10,884,164	760,119	2,989,815	174,760	27.5	23.0	-93.0	-94.2
Portugal.....	2,225,310	4,352,011	858,096	1,629,003	38.6	37.4	95.6	89.8
Spain.....	9,144,058	9,643,711	3,302,129	3,435,638	36.1	35.6	5.5	4.0
Sweden.....	7,837,472	3,043,883	1,924,535	762,712	24.6	25.1	-61.2	-60.4
Switzerland..	28,087,520	26,962,144	11,846,418	11,876,560	42.2	44.0	-4.0	.3
Union of Soviet Socialist Republics..	8,429,621	6,817,830	2,951,551	2,793,294	35.0	41.0	-19.1	-5.4
United Kingdom.....	105,243,962	98,822,672	44,020,551	40,063,045	41.8	40.5	-6.1	-9.0
Yugoslavia...	2,686,300	493,230	1,318,024	267,088	49.1	54.2	-81.6	-79.7
Other countries ..	12,052,533	2,167,428	2,999,194	637,343	24.9	29.4	-82.0	-78.8
Total Europe..	\$353,933,479	\$200,345,487	\$130,709,252	\$80,256,187	36.9	41.1	-43.4	-38.6
North and Central America:								
Canada.....	\$119,102,340	\$154,528,312	\$20,284,082	\$27,071,486	17.0	17.5	29.7	33.5
Cuba.....	116,183,023	121,671,710	60,589,808	55,137,020	52.2	45.3	4.7	-9.0
Dominican Republic ..	1,885,558	2,579,722	1,291,283	1,879,725	68.5	72.9	36.8	45.6
Mexico.....	19,199,094	46,475,784	8,208,962	19,584,457	42.8	42.1	142.1	138.6
Netherlands West Indies	10,533,154	9,270,410	1,772,692	1,369,886	16.8	14.8	-12.0	-22.7
Newfoundland.....	1,334,923	3,875,776	208,015	1,188,589	15.6	30.7	190.3	471.4
Other countries ..	2,627,701	3,137,039	710,248	1,249,268	27.0	39.8	19.4	75.9
Total North and Central America.	\$270,865,793	\$341,538,753	\$93,065,090	\$107,480,431	34.4	31.5	26.1	15.5
South America:								
Argentina....	\$ 47,233,156	\$ 78,596,113	\$21,340,331	\$45,513,186	45.2	57.9	66.4	113.3
Bolivia.....	421,279	2,812,942	245,302	1,582,910	58.2	56.3	567.7	545.3
Brazil.....	12,028,912	18,076,245	3,086,584	5,686,381	25.7	31.5	50.3	84.2
Chile.....	3,398,341	31,193,134	1,385,961	12,554,048	40.8	40.2	817.9	805.8
Peru.....	4,636,483	9,036,972	3,920,152	6,645,546	84.6	73.5	94.9	69.5
Uruguay.....	12,480,797	30,264,302	8,134,724	21,161,825	65.2	69.9	142.5	160.1
Venezuela....	22,187,827	37,386,033	4,457,781	5,188,339	20.1	13.9	68.5	16.4
Other countries ..	6,662,371	9,615,559	1,212,648	1,609,218	18.2	16.7	44.3	32.7
Total South America.	\$109,049,166	\$216,981,300	\$43,783,483	\$99,941,453	40.2	46.1	99.0	128.3
Asia:								
British India.	\$47,968,912	\$59,418,212	\$ 7,739,843	\$ 9,468,859	16.1	15.9	23.9	22.3
China.....	27,082,012	39,584,747	11,648,001	15,711,164	43.0	39.7	46.2	34.9
Iraq.....	1,634,292	2,042,118	681,141	710,962	41.7	34.8	25.0	4.4
Iran.....	2,688,688	3,054,937	1,232,917	1,351,910	45.9	44.3	13.6	9.7

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VALUES OF DUTIABLE IMPORTS FOR CONSUMPTION AND ESTIMATED DUTIES COLLECTED, BY COUNTRIES

Country	Value		Duties		Percent- age Duties to Values		Percentage Increase or Decrease (—)	
	1940	1941	1940	1941	1940	1941	Value	Duties
Asia (<i>Cont.</i>):								
Japan.....	43,045,369	38,161,062	17,896,589	15,293,575	41.6	40.1	-11.4	-14.6
Kwantung...	1,334,036	1,759,781	953,000	955,152	71.4	54.3	31.9	.2
Netherlands								
Indies.....	5,072,914	7,045,266	3,202,560	3,948,333	63.1	56.0	38.9	23.3
Philippine								
Islands....	3,982,593	3,768,401	563,977	579,849	14.2	15.4	-5.4	2.8
Syria.....	706,318	685,686	524,475	624,485	74.3	91.1	-2.9	19.1
Turkey.....	12,666,782	12,636,498	8,507,525	8,666,703	67.2	68.6	-.2	1.9
Other								
countries..	3,533,142	6,417,975	945,277	1,324,908	26.8	20.6	81.7	40.2
Total Asia:	\$149,715,058	\$174,574,683	\$53,895,305	\$58,635,900	36.0	33.6	16.6	8.8
Oceania:								
Australia...	\$ 8,775,853	\$ 44,647,242	\$ 6,119,015	\$27,744,812	69.7	62.1	408.3	353.4
Other								
countries..	3,232,498	2,593,730	1,767,149	738,704	54.7	28.4	-19.8	-58.2
Total								
Oceania..	\$12,008,351	\$ 47,240,972	\$ 7,886,164	\$28,483,516	65.7	60.3	293.4	261.2
Africa:								
Belgian Congo	\$ 284,454	\$ 2,393,175	\$ 99,018	\$ 912,204	34.8	38.1	741.3	821.3
Egypt.....	6,178,743	6,592,692	2,503,700	2,296,174	40.5	34.8	6.7	-8.3
Gold Coast..	3,855,457	4,635,949	1,501,522	1,403,869	38.9	30.3	20.2	-6.5
Union of								
South								
Africa.....	10,158,662	12,952,414	5,702,207	5,423,468	56.1	41.9	27.5	-4.9
Other								
countries..	3,659,648	4,006,454	859,940	999,966	23.5	25.0	9.5	16.3
Total Africa	\$24,136,964	\$30,580,684	\$10,666,387	\$11,035,681	44.2	36.1	26.7	3.5
GRAND TOTAL	\$919,701,163	\$1,011,261,879	\$340,005,668	\$385,305,912	37.0	38.1	10.0	13.3

on sugar and, in the case of the latter, to the reduction in the tax rate on petroleum under the terms of the Venezuelan trade agreement accompanied by a quota limitation on imports. Japan was the only Asiatic country from which a diminished customs revenue was obtained. Each of the three chief African sources of revenue—Egypt, Gold Coast, and Union of South Africa—yielded slightly smaller returns in 1941, but these decreases were more than offset by a nine-fold increase in revenue on imports from the Belgian Congo.

Among the many countries which increased in importance as sources of customs revenue were Chile with a nine-fold increase, Bolivia and Newfoundland, each of which provided approximately six times as much revenue as in the previous year, Australia

with more than a four-fold increase, and Argentina, Uruguay, and Mexico, each of which yielded more than twice as much revenue as in 1940. Almost every one of the large increases in revenue enumerated above was the result either of greatly increased imports of wool or of some one of the dutiable metals used for the mounting defense production.

DUTY REFUNDS

Much larger amounts were refunded to importers during 1941 than during the previous year. A part of the \$8,504,000 of excessive duties refunded resulted from court decisions establishing lower rates on certain importations than those originally specified by customs officers. The remainder represented adjustments resulting from changes in the classification,

ADMINISTRATION OF THE TARIFF LAWS

weight, or value ascertained subsequent to importation. The amount of drawback paid in 1941 (\$16,932,000) also exceeded the 1940 payments. More than 99 per cent of this drawback was paid on exported merchandise manufactured from imported materials, of which sugar, copper, and wool were of predominant importance.

ENTRIES OF MERCHANDISE

For the third successive year, there were fewer entries of merchandise than during the preceding year despite increased collections for the second successive year. The continuation of this somewhat anomalous situation

was due to the character of the imports which, under the war conditions of 1940 and 1941, yielded more than half of the customs revenue. On sugar, wool, petroleum, and metals, the average yield in revenue per entry is high, while those commodities previously received from Europe were imported in comparatively small quantities and at frequent intervals. Each of the principal types of entries declined in 1941, the slight increase in the number of "all other" entries being due to the larger number of notices of intent to export with benefit of drawback which continued to increase with the further expansion of exports.

MERCHANDISE ENTRIES

	Number of Entries		Duties Collected		Percent of Increase or Decrease (—)	
	1940	1941	1940	1941	No. of Entries	Duties
Consumption entries....	465,988	389,125	\$190,975,004	\$210,724,762	-16.5	10.3
Warehouse and rewarehouse entries.....	68,469	62,914	.....	.....	-8.1	....
Warehouse withdrawals.	360,039	327,707	151,029,141	173,976,473	-9.0	15.2
Mail entries.....	423,000	294,511	2,098,094	1,260,477	-30.4	-39.9
Baggage entries.....	535,468	465,011	537,533	310,343	-13.2	-42.3
Informal entries.....	191,167	179,328	689,326	692,847	-6.2	.5
Appraisement entries...	16,721	12,177	143,788	82,536	-27.2	-42.6
Increased and additional duties.....	.....	.....	4,187,897	4,089,543	....	-2.3
Other.....	620,648	644,199	150,334	183,522	3.8	22.1
Total.....	2,681,500	2,374,972	\$349,811,118	\$391,320,502	-11.4	11.9

¹ Revised.

INTERNATIONAL TRAFFIC

Motor Vehicles and Trains.—Only 8,901,000 motor vehicles entered the United States during 1941, a smaller number than during the lowest depression year and these brought 527,358 fewer passengers than in 1934. A small decline in the number of passenger trains entering the country was also accompanied by a large decrease in the number of passengers arriving by train.

Vessels.—A slightly smaller number of vessels reached this country during 1941 than during the previous year and only 443,000 persons reached the United States by this means, a 40 per cent decrease from 1940 and a 57 per cent decrease from 1939. Undocu-

mented vessels and ferries were also used less frequently and showed sharp declines in passenger traffic.

Airplanes.—For the tenth consecutive year, airplane traffic on international lines continued to expand. The number of airplanes entering the country was 26 per cent greater and the number of passengers using this means of transportation 20 per cent more than during the previous year. The port of Miami, Fla. continued to be by far the most important terminus in the country. Large gains over 1940 were also recorded at Brownsville, Tex.; Burlington, Vt.; Fairbanks and Juneau, Alaska; and New York City.

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LAW ENFORCEMENT

Seizures and Collections.—The pronounced decrease in traffic was reflected in a decline in the number and value of seizures for the violation of customs laws, the 8,375 seizures valued at \$1,181,809 representing declines from 1940 of 19 and 6 per cent, respectively. Collections from fines, penalties, liquidated damages and sale of seizures aggregated \$749,224, a decrease of 15 per cent from the previous year. This decrease may be directly attributed to the decline in tourist travel, only \$71,897 being collected during 1941 as a result of undeclared articles in the baggage of persons arriving from abroad as compared with \$311,360 in 1940.

Narcotics.—Although fewer narcotic seizures were made in 1941, their value was more than twice that of the previous year. In both years, however, the quantity and value of narcotics seized was only a small fraction of the 1939 totals.

Smuggling Cases.—One of the most important seizures of the year consisted of 57 bars of gold bullion valued at over \$52,000 seized at Blaine, Wash. There were 526 arrests in 1941 in connection with all seizure cases, an increase of 27 from the preceding year. Of the 587 cases disposed of in 1941, 403 convictions were secured or 69 per cent of the total. Prison terms to which customs violators were sentenced aggregated more than 308 years

in 1941 compared with 155 years in 1940.

ADMINISTRATIVE PROVISIONS

As a part of its function in the enforcement of the Antidumping Act of 1921, the Bureau of Customs during the year issued one finding of dumping and revoked two. A finding was also promulgated under the provisions of section 307 of the Tariff Act of 1930 that convict labor was used in the manufacture of cotton gloves in the locality of Nagoya, Japan.

The policy of controlling imports by means of quotas was slightly extended by the addition of two new quotas and the modification of three existing ones. The new quotas applied to coffee effective April 16, 1941 and to wheat and wheat flour effective May 29, 1941.

Almost all European representatives of the Customs Service were withdrawn from that area during the fiscal year and were transferred to domestic duties. A new office was opened in June, 1941, at Mexico City and this, together with offices at Montreal, Toronto, Havana, and in the Orient, comprised the entire foreign service at the end of the year.

During the year a port of entry was established at Sonoyta, Ariz. and a new station at Lopeno, Tex. The ports of Ajo, Ariz.; Unalaska, Alaska; and Molson, Wash.; and the stations of Columbia Falls, Mont.; Guayanilla and Jobos, Puerto Rico was abolished.

RAILROADS

BY JOHN J. PELLEY

PRESIDENT, ASSOCIATION OF AMERICAN RAILROADS

GENERAL

The year 1941 was a very busy year for the railroads. They moved more ton-miles of freight than in any previous year of record and performed more passenger-miles of service than in any years since 1929. They achieved new records in efficiency and economy of operation, and at all times during the year had facilities

adequate to handle the record traffic offered to them. They cooperated closely with government authorities in order to ensure prompt handling of defense, Lease-Lend, and war traffic. They installed in service more new freight cars and locomotives than in any year since 1930. They reduced the number and ratio of bad order cars to an all-time low and effected a

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substantial reduction in the number and ratio of bad order locomotives. They settled the wage controversy with their employees by making considerable increases in wage rates, after protracted negotiations which ran through and beyond the machinery for settlement set up by the Railway Labor Act. They had under continuing study the future transportation needs of the country, first on the basis of the defense and Lease-Lend programs, later on the basis of a full war-time economy.

Other matters of significance to the railroads in 1941 included filing of a petition with the Interstate Commerce Commission late in the year, seeking authority to increase rates and fares to offset the cost of the wage increases; appointment by the President of the three members of the Board of Investigation and Research created by the Transportation Act of 1940; creation of an Office of Defense Transportation to coordinate government policies and activities affecting transportation during the war period; Congressional activities with respect to highway and pipeline construction and inland waterway improvements.

SERVICE ADEQUACY AND EFFICIENCY

Stimulated by the defense and Lease-Lend programs, freight and passenger traffic increased in 1941 over the preceding year for the third successive year. The increases during this three-year period amounted to 39 per cent in carloadings, 63 per cent in freight ton-miles, and 35 per cent in passenger-miles. Freight ton-miles, which reached a new all-time peak in 1941, increased during the period at a much greater rate than did carloadings, because of heavier loading per car and a lengthening of average haul.

The sharp increase in traffic volume from the 1938 low, approximately one-half of which occurred in 1941, found the railroads well prepared. Their capacity, measured largely by the number of serviceable equipment units and by the efficient use of each unit, was kept in balance with the growing needs of the defense and

Lease-Lend programs. Now that the country is on the basis of a full war-time economy, railroad plans call for further and continuing increases in the supply of serviceable equipment. Materials and supplies necessary to carry out this program of expansion must also be kept in balance.

THE CAPACITY PROGRAM

The railroad program for increased capacity really began in the early summer of 1939, when the railroads undertook to make ready their facilities for the autumn seasonal peak of that year. The program has been continuous since that time, with adjustments in plans as new developments have occurred. The primary objective of the original program was to effect a substantial reduction in unserviceable equipment units. As time went on, the program of equipment repair was continued, with the result that the ratio of unserviceable freight cars was reduced from 14.2 per cent on June 1, 1939 to 3.7 per cent on Jan. 1, 1942. This single development added 169,284 cars to the serviceable freight car supply. During the same period the unserviceable ratio of steam locomotives was reduced from 20.6 per cent to 8.6 per cent.

The second method of increasing railroad capacity was by the purchase of new cars and locomotives. From June 1, 1939 to Dec. 31, 1941, the railroads installed 163,464 new freight cars, 375 new steam locomotives, and 901 new electric and diesel locomotives.

The net result of the reduction in bad order equipment and the installation of new units, after allowing for retirements, was to increase the serviceable freight car supply by 206,107 units, the serviceable steam locomotive supply by 2,693 units, and the serviceable electric and diesel locomotive supply by 865 units.

The third means of increasing railroad capacity was by increased efficiency of operations. Possibly the best single measure of this, in freight service, is the average net ton-miles per freight train-hour. This average increased from 12,473 net ton-miles in

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1938 to 14,938 net ton-miles in 1941, an increase of 20 per cent. This has been a factor of tremendous significance in the over-all adequacy of railroad services. It means that each hour a single freight train was in operation in 1941 it performed on the average one-fifth more net ton-miles of service than in 1938.

The fourth means of increasing railroad capacity was through heavier loading per car and by prompt loading and unloading of cars. The carriers have had the whole-hearted co-operation of both shippers and the government in furthering this important part of their program. In addition, shippers and the government have furnished the railroads with definite advance notice of car requirements, thereby promoting better car utilization.

FORWARD PLANS FOR 1942

That rail services in 1941 were adequate to meet all demands is a tribute to the foresightedness of railroad management in laying out and following a definite program. Already plans have been laid for 1942. On Jan. 1, 1942, unfilled orders for new equipment amounted to 74,897 freight cars, 258 steam locomotives, and 288 electric and diesel locomotives. Additional orders for some 40,000 new freight cars and some 400 new locomotives for delivery by Oct. 1, 1942 are contemplated. To what extent this program will be carried out, in its present or even more expanded form, will depend on the priorities for materials to be granted by the Supply Priorities and Allocations Board. That Board on Jan. 2, 1942, authorized the Office of Production Management to grant priorities and other help to the railroads during the first quarter of 1942, which would provide for the repair of locomotives and of freight and passenger cars, for 9,000 new freight cars in the month of January, and for 36,000 more freight cars during February, March, and April. In addition, the Board provided for continued production through April of locomotives already on order. The corresponding pro-

gram for the balance of the year 1942 was left for later determination, on the basis of reports to be presented to the Board by Director of Defense Transportation Eastman. It is clear that if the railroads are to continue to render the adequate and efficient services they have been supplying, they must have the necessary materials to carry out their carefully planned programs of maintenance and of new equipment.

THE WAGE CASE

Railroad employees filed demands on June 10, 1941 for increased wage rates. These demands were made by two groups of employees: first, the five train and engine service brotherhoods, the so-called operating group; second, the 14 cooperating unions of non-transportation employees, the so-called non-operating group.

The operating group asked for a 30 per cent increase in wage rates, with a minimum increase of \$1.80 per man per day. The non-operating group asked for an increase of 30 cents per hour, with a minimum rate of 70 cents per hour. In addition, the non-operating group asked for a two-week's vacation with pay. In the aggregate, these demands, if granted, would have increased railroad costs by about \$900,000,000 annually, based on 1941 employment.

The matter followed the ordinary procedure required by law, but without settlement. Conferences were held between the two parties. Services of the Mediation Board were invoked. The railroads agreed to arbitrate the matter, but the two labor groups refused. The two labor groups took strike votes and set dates for work stoppage. The President appointed an Emergency Fact-Finding Board to hear evidence from both sides and to submit recommendations for settlement. The Emergency Board held public hearings in Chicago from Sept. 15 to Oct. 22, and on Nov. 5 rendered a report to the President.

The Board recommended an increase of 7½ per cent in wage rates for the operating group and an increase of 9 cents per hour for the non-

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operating group, both retroactive to Sept. 1, 1941 and both to expire on Dec. 31, 1942. In addition, a one-week vacation with pay was recommended for non-operating employees. The aggregate cost to the railroads of these recommended increases was estimated by the Board at about \$265,000,000, based on 1941 employment levels.

Railroads notified the President of their acceptance of the Board's recommendations. Both employee groups, however, rejected the report, and the operating group issued a strike call, the walk-out to begin on Dec. 7. After conferences at the White House between the two parties and government officials failed to achieve a settlement, the President reconvened the Emergency Board, which held further hearings on Nov. 28 and 29. The Board then offered its services to mediate the controversy, and after two days of almost continuous conferences, the Board announced that a compromise had been evolved to which both parties had agreed.

According to this agreement, the original wage increases recommended by the Board were to be effective from Sept. 1 to Nov. 30, 1941. Effective Dec. 1, the increase for the operating group became 9½ cents per hour, instead of 7½ per cent, and for the non-operating group the increase became 10 cents per hour instead of 9 cents. There is no termination date for these increases and they are now part of the basic wage scale. In addition, vacations for clerks and telegraphers were extended to nine and 12 days, according to length of service, while for other non-operating forces the original recommendation by the Board was retained.

The cost of this mediated agreement to the railroads, including payroll taxes, will approximate \$332,000,000 per year, and will raise the average annual earnings of railroad employees well in excess of \$2,100. The fact that employees went beyond the machinery set up in the Railway Labor Act in order to enforce their demands seriously undermines the future effectiveness of that act. It has

long been considered a model for settlement of labor disputes.

THE PETITION FOR INCREASED RATES AND FARES

Facing an increase of about \$332,000,000 annually in wage costs and payroll taxes, the carriers on Dec. 13 filed a petition with the Interstate Commerce Commission asking authority to increase freight rates and passenger fares by 10 per cent, with certain exceptions. The case was docketed by the Commission as *Ex Parte 148*, and hearings were held in St. Louis in January, 1942. On Jan. 21 the Commission announced the granting of an increase of 10 per cent in passenger fares to become effective on 10 days' notice. The additional revenue a year is estimated at \$45,000,000. Increases in freight rates were still pending when the new passenger fares became effective on Feb. 10, 1942. The passenger fare increases do not apply to special reduced fares for service men on furlough or to extra fares on *de luxe* trains.

BOARD OF INVESTIGATION AND RESEARCH

The Transportation Act of 1940 created a three-man Board of Investigation and Research to study and report to Congress on certain phases of the transportation problem in this country. It was nearly a year after the act became effective before the Board was set up. It consists of Nelson Lee Smith of New Hampshire, C. E. Childe of Nebraska, and R. E. Webb of Kentucky.

The life of the Board is scheduled to expire on Sept. 18, 1942, although by terms of the act the President by executive order may grant a two-year extension. The Board will study (1) the relative economy and fitness of carriers by railroad, highway and water; (2) the extent to which each is subsidized; (3) the extent to which each is taxed; and (4) other relative matters. To date, the Board has been engaged principally in organization matters, and in outlining its program. It has appealed for recommendations in this respect from interested parties.

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OFFICE OF DEFENSE TRANSPORTATION

Shortly before the close of 1941, the President by executive order created the Office of Defense Transportation, and named Joseph B. Eastman, chairman of the Interstate Commerce Commission as director. Mr. Eastman served as Federal Coordinator of Transportation during the life of that office, June, 1933 to June, 1936.

The purpose of the Office of Defense Transportation, as stated by Mr. Eastman, "is to lend the aid and authority of the Government to the maintenance and development of transportation services which will effectively and efficiently meet the needs of the country in its war effort."

The Office includes a Division of Railway Transport headed by Victor V. Boatner; Division of Traffic Movement with John R. Turney as its chief, and Division of Rates directed by G. Lloyd Wilson. Joseph L. White has been appointed as executive assistant to Director Eastman. In addition, there are divisions of motor transport, inland waterway transport, coastwise and intercoastal transport, transport personnel, and probably other activities. Special assistants will help the director in matters relating to pipe lines, tankers, tank cars, and tank trucks, with respect to Great Lakes carriers, and with respect to air transport.

In announcing his staff appointments, Mr. Eastman expressed regret that Ralph Budd, former Commissioner of Transportation of the Advisory Commission to the Council of National Defense, was unable to undertake direction of the Division of Railway Transport in the new set up. Mr. Budd has returned to his duties as president of the Chicago, Burlington & Quincy Railroad Co.

LEGISLATION

General.—No important legislation bearing directly on the railroads was enacted during 1941. There were several matters before Congress during the year of considerable interest to the railroads, dealing principally with further aids to railroad competitors.

Pipelines.—Congress passed a pipeline measure which grants to petroleum pipe-line companies the right of eminent domain, under certain conditions. It further authorized construction of pipe lines by the Federal Government if necessary for national defense.

Omnibus Bill.—After extended hearings before the House Committee on Rivers and Harbors on several proposed inland waterway projects, an omnibus bill was introduced in the House embracing some 236 projects which the committee report estimated would, if authorized, cost close to \$1,000,000,000. Included in the bill are the St. Lawrence Waterway, Florida Ship Canal, and Tombigbee-Tennessee, Beaver-Mahoning, Trinity, and many other projects.

The committee report on the bill contained three dissenting minority reports, 10 of the 25 members of the committee signing one or more of these. The first minority report opposed the St. Lawrence project; the second opposed the Beaver-Mahoning project; the third outlined certain objections to the bill as a whole. Just when the bill will reach the floor of the House is not known at this time. Possibly our entrance into the war will sidetrack the matter for an indefinite period.

I. C. C. Regulatory Powers.—Bills were introduced in both Houses during the year granting the Interstate Commerce Commission certain regulatory powers over sizes and weights of motor vehicles. Hearings on these measures are scheduled early in 1942. Bills which would give the Interstate Commerce Commission regulatory powers over freight forwarding companies passed both Houses of Congress during the year, but as the bills differed in some respects, the matter went to conference.

The Revenue Act of 1941 was of considerable significance to the railroads. Not only did it substantially raise corporation income tax rates, but it also imposed a tax of 5 per cent on passenger fares above certain minima. This tax, effective Oct. 10, 1941, applies to railroad, motor ve-

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hicle, water, and air carriers. It is to be collected for the government by the carriers.

REORGANIZATION AND OTHER MATTERS

Some progress was made in reorganization proceedings during the year. Two Class I companies (Chicago & Eastern Illinois and Chicago Great Western), four Class III companies, and one small leased line were discharged from trusteeship or receivership. At the very end of the year the reorganization of the Erie and of the Wabash was virtually completed. Thus, a total of 67,949 miles of line remained in the hands of the courts. This represents 27.5 per cent of the total rail mileage of the country.

Railroad indebtedness to the Reconstruction Finance Corporation stood at \$455,244,000 on Oct. 31, 1941. This was a reduction of \$26,284,996 below the indebtedness on Dec. 31, 1940.

As of Dec. 31, 1941, the Railroad Retirement Board had 156,513 annuitants and pensioners on its rolls, with benefit disbursements at an annual rate of \$119,806,584. During the year

1941, the Retirement Board paid out \$14,536,881 in unemployment insurance benefits.

FINANCIAL RESULTS

From a financial standpoint, the results of the year's operation were the best since 1929, but did not reach the level of that year by a considerable margin. Stimulated by increases of 27 per cent in freight ton-miles and 22.9 per cent in passenger-miles over 1940, operating revenues crossed the \$5,000,000,000 mark for the first time since 1930, but were nearly \$1,000,000,000 less than in 1929. Taxes reached an all-time high of \$546,071,000, or an average of nearly \$1,500,000 per day. Net railway operating income amounted to \$999,503,000, which produced a rate of return on property investment of 3.8 per cent, the highest since 1929, but a full percentage point below the 4.8 per cent earned in the latter year. Net income after fixed charges amounted to \$500,546,000, which may be compared with a net of \$524,000,000 in 1930 and \$897,000,000 in 1929. The following table gives the significant financial and traffic results of 1941, 1940, and 1929:

PRINCIPAL OPERATING RESULTS

(Class I Railways in the United States)

	1941 (millions)	1940 (millions)	1929 (millions)
Operating revenues.....	\$5,337	\$4,297	\$6,280
Operating expenses.....	3,664	3,089	4,506
Taxes.....	546	396	397
Net railway operating income.....	1,000	682	1,252
Return on investment—per cent.....	3.79	2.59	4.81
Net income after charges.....	501	189	897
Ton-miles.....	474,000	373,253	447,322
Passenger-miles.....	29,200	23,752	31,074

THE OUTLOOK

With this country plunged fully into war, speculation as to the immediate future of a particular industry is idle. Only one thing seems certain, and that is that all resources must be thrown into the struggle. The railroad industry stands ready to do its share. It is a mighty transportation machine, capable of perform-

ing services that no other transportation system in the world can even closely approach. It has already absorbed, in stride, a substantial increase in traffic during the past three years. It can and will absorb much more provided the materials and supplies it needs are made available. The railroads will play a vital part in this period of national emergency.

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HIGHWAYS

By THOMAS H. MACDONALD

COMMISSIONER OF PUBLIC ROADS, PUBLIC ROADS ADMINISTRATION,
FEDERAL WORKS AGENCY

FEDERAL-STATE COOPERATIVE WORK

Federal-State highway construction during the fiscal year, 1941 resulted in the improvement of 11,724 miles of highway, the elimination of 321 railroad-highway grade crossings, the reconstruction of 65 obsolete grade crossing structures, and the installation of protective devices at 941 grade crossings. Most of the year's work consisted of modernizing the main highways to meet the demands of a constantly increasing motor-vehicle traffic. This involved the widening and strengthening of surfaces, straightening of alignment, flattening of grades, and elimination of hazards at the most dangerous railroad-highway grade crossings.

Federal-aid and state funds financed nearly all of the year's work, although small amounts of the emergency Federal grants for highway and grade crossing work were involved. Regular Federal-aid funds for 1941 were \$115,000,000 for improvement of the Federal-aid highway system, \$15,000,000 for improvement of secondary or farm-to-market roads, and \$30,000,000 for the elimination of hazards to life at railroad grade crossings. The states were required to match the highway and secondary road funds, but the grade crossing funds were available to pay the full cost of construction. These annual authorizations are not a true measure of work done during the year, as road building is a continuing process and many projects begun in one year are completed in the following year. Actual payments of Federal funds to the states in 1941 amounted to \$167,999,544.

TYPES OF ROAD COMPLETED

Improvements during the year are classified by type as follows:

	Miles
Graded and drained.....	2,244
Sand-clay, treated and untreated.....	1,072
Gravel, treated and untreated.....	3,815
Macadam, treated and untreated.....	370
Low-cost bituminous mix.....	1,866
Bituminous macadam.....	185
Bituminous concrete.....	355
Portland cement concrete.....	1,742
Block.....	9
Bridges and approaches (surfaced)....	56
Grade separations.....	10
Total.....	11,724

One of the most important parts of the nation's highway improvement program has been the railroad grade-crossing elimination and protection work. During the calendar years, 1933 to 1940, inclusive, over 5,000 of the country's most dangerous crossings have been eliminated and over 4,000 have been protected by signals and other warning devices. Highway traffic has benefited from this work both in increased safety and in reduction of delay and congestion at grade crossings.

MODERNIZATION OF MAIN HIGHWAYS

Although the main highways are now almost entirely surfaced, many of the older roads are too narrow, winding, and steep to render adequate service to the large volumes of fast-moving highway traffic. Many old bridges are likewise obsolete and should be replaced.

The elimination of congestion in and around the larger cities is a traffic need even more pressing than the modernization of rural highways. The present delay, hazard, and confusion on main traffic arteries in cities can be eliminated only by the construction of limited access highways. Such highways would pass over or under all intersecting streets, and access to them would be limited to carefully selected points. These express highways

HIGHWAYS

through cities would be supplemented by beltline highways around the cities. The high cost of the necessary right of way, in some cases exceeding actual construction costs, is the most serious obstacle that now retards the making of these needed improvements.

HIGHWAYS AND NATIONAL DEFENSE

The national defense program has created the need for two classes of public highway improvement. First, new and greatly expanded military establishments and defense industries must have adequate road connections with adjacent improved roads and streets. In some cases entirely new roads are required; in others existing access roads must be widened and strengthened. In 1941, Congress authorized the appropriation of \$150,000,000 to pay the full cost of such needed access roads.

The second class of highway improvement is the strengthening of weak links in the principal traffic routes of military importance. This is a system of 78,000 miles of main highways designated by the Secretary of War as being of particular strategic importance in national defense.

During the fiscal year 1941 every effort was made to provide for the construction of these defense roads with available funds. At the close of the year, work on 3,945 miles of such roads, estimated to cost \$160,615,179, was under construction, approved for construction, or had been completed. Of this amount, \$90,616,003 was Federal funds, the balance being state matching funds.

HIGHWAY PLANNING SURVEYS

Highway planning surveys, begun in 1935 and since undertaken in all states in cooperation with the Public Roads Administration, are providing much valuable information. The surveys include a road inventory, a traffic survey, and financial, road-use, and road-life surveys. Most of the states have completed the initial collection of the data, and are now engaged in analyzing the information and keeping it up to date.

The planning survey data constitute a vast reservoir of information for the guidance of highway officials and legislative bodies and for the enlightenment of the public. They are being used constantly in the selection and revision of highway systems; in setting up programs for new construction, modernization, and replacement; and in the making of recommendations to legislatures concerning the allocation of highway revenues and the regulation of motor vehicles. Highway planning survey information has also been used in the selection of a strategic network of roads, in laying out access roads to military reservations, industrial plants, and other points of military importance.

One of the most immediately useful products of the surveys has been the county maps. These maps, now complete for nearly all counties, show all rural roads, their type and traffic, all other transportation facilities, and all rural dwellings, churches, etc.

Planning survey data have revealed the need for improvement of a limited system of main inter-regional highways, with express routes through and beltline highways around the larger cities and alternate routes around the smaller towns. In 1941, the President appointed a National Inter-regional Highway Committee of seven members to study and make recommendations regarding such a highway system. Existing highways would form the nucleus of such a system, with improvements where needed.

ROAD CONSTRUCTION IN FEDERAL AREAS

During the fiscal year, 1941 the Public Roads Administration supervised the construction of 179 miles of road in public lands and Federal reservations, 294 miles in national forests, and 310 miles in or leading to national parks and monuments. Construction of roads in such areas has been a Federal policy for many years. Such roads are needed to give continuity to the Federal-aid and state highway systems, and to make accessible recreational areas and places of historical interest. There has been an increase

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in the number of motorists visiting the scenic areas included in the national forests, parks, and monuments, particularly during the past few years when foreign travel has been restricted.

National parks in the West visited by the greatest numbers of people include Yosemite in California, Boulder Dam in Nevada and Arizona, Yellowstone in Wyoming, and Rocky Mountain in Colorado. Shenandoah in Virginia and Great Smoky Mountains in North Carolina and Tennessee are the most-visited eastern parks. Construction of the Blue Ridge Parkway, which will pass through and connect these parks, is progressing steadily, and 248 miles have been completed. Work is also progressing on the Natchez Trace Parkway, which will follow the old pioneer trail between Nashville, Tenn. and Natchez, Miss. Fifty-eight miles of this parkway have been completed.

HIGHWAY SAFETY

During 1940, the death toll in motor-vehicle accidents was 34,500, an increase of 6.5 per cent over the previous year. Increases of 6.2 per cent in gasoline consumption and 4.7 per cent in number of registered motor vehicles were also recorded during the year, however, and the death rate per 100,000,000 vehicle-miles of highway travel remained unchanged at 12.1.

The problem of reducing the death toll on highways is being attacked from many angles and by numerous agencies. Highway design standards are constantly being raised. Every year many sections of narrow, steep, or winding road are widened, flattened, or straightened, and the number of hazardous railroad grade crossings is constantly being reduced. Highway safety is taught in the schools, and traffic laws are being more vigorously enforced, with increasingly severe penalties for flagrant violations.

THE INTER-AMERICAN HIGHWAY

Work on the projected Inter-American Highway from Laredo, Tex., to

Panama City has progressed steadily. Nearly two-thirds of the route has been improved with all-weather surfaces. The 3,252 miles of the route extending through Mexico, Guatemala, El Salvador, Honduras, Nicaragua, Costa Rica, and Panama. The section of the route from Texas south to Mexico City has been paved and carries a considerable volume of tourist travel. The status of improvement in each country at the close of the fiscal year, 1941 was as follows:

STATUS OF IMPROVEMENT OF THE INTER-AMERICAN HIGHWAY¹

Country	Paved and Other All-Weather	Dry Weather and Trails	Total
	Miles	Miles	Miles
Mexico.....	1,045	667	1,712
Guatemala...	300	—	300
El Salvador...	174	10	184
Honduras....	30	58	88
Nicaragua...	93	152	245
Costa Rica...	54	302	356
Panama.....	308	59	367
Total.....	2,004	1,248	3,252

¹ From the U. S.-Mexican border to the Panama Canal.

The cooperative work of the United States has generated a strong interest in Central American countries in the Inter-American Highway. Several of the countries are extending or further improving sections of the route. Considerable impetus has been given to highway work by Export-Import Bank loans to Costa Rica, Panama, and Nicaragua.

PROPOSED PAN AMERICAN HIGHWAY

The desirability of constructing a Pan American Highway connecting all countries of the two American continents has been recognized for many years. It was first officially recognized at the Pan American Highway Congress at Santiago, Chile, in 1923, and interest in it was reaffirmed at the Fourth Pan American Highway Congress at Mexico City in 1941. Many

THE MOTOR BUS INDUSTRY

economic and cultural benefits would inevitably accrue to all countries from such a highway, which would constitute the nucleus of a general highway system in each country.

The Public Roads Administration is aiding in the development of the Pan American Highway System by suggestion, consultation, and, when requested, by furnishing professional assistance. Through Export-Import Bank loans financial assistance for highway construction has been given Paraguay and Ecuador.

Many South American countries have made considerable progress in completing routes that form parts of

the system. Three-fourths of the route from the Panama-Colombia border to Buenos Aires, Argentina (including an alternate route from Vitor, Peru, to Buenos Aires) is passable during all seasons of the year. The Simon Bolivar Highway, extending from the Atlantic Coast at La Guaira, Venezuela to the Pacific Coast at Guayaquil, Ecuador, a distance of 2,295 miles, has all-weather surfaces for seven-eighths of its length, and the remainder has dry weather surfaces. Over half of the 1,922-mile Rio de Janeiro-Montevideo-Buenos Aires highway has all-weather surfaces and most of the remainder has dry-weather surfaces.

THE MOTOR BUS INDUSTRY

By CARL W. STOCKS

EDITOR, *Bus Transportation*

DEFENSE FACTORS AND PROBLEMS

The year 1941 was one of the most phenomenal in the entire history of the motor bus industry. Not only was the motor bus called upon to handle more riders than ever before, but it was faced with new and urgent problems stemming from the defense program. Much of the increased traffic has come from defense activities, involving not only sharply increased civilian worker riding, but a large volume of purely military traffic. In handling this increased traffic the industry has found itself hampered by a rapidly developing shortage of new equipment and of repair parts and supplies. The industry was granted an A-3 priority rating on new buses in August. But this has had less effect than might be expected, due to actual shortages of many needed materials and the fact that the war orders naturally have first priority.

BUSES AND NATIONAL DEFENSE

A year ago scarcely anyone foresaw the important part the motor bus would play in the defense program, not even the operators themselves. Study of the experience of Great Brit-

ain, or in fact of any other country engaged in this war, might have given forewarning. In Great Britain, for example, motor bus lines have proven their ability to carry on under the worst sort of conditions, maintaining essential civilian and Army traffic when rail lines have been at least temporarily bombed out of existence. And the experience of Britain has proved without question that transportation is next in importance to food and water.

The motor bus industry of this country was not caught flat-footed when the events of 1941 sent hundreds of thousands of workers flocking to new jobs in factories and plants. Nor did the sudden influx of military traffic catch the bus industry wholly unprepared. There had always existed in the bus industry a certain margin of unused buses and also empty seats, a gap between the normal pay-load and the actual passenger carrying capacity of the industry. Moreover, the bus companies were staffed with highly skilled supervisory and traffic forces. While operating as individual companies, the 3,500 motor bus carriers of this country have, in effect, teamed together to handle a herculean

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job, and to do it with an economy of effort and a maximum of effectiveness worthy of the highest praise.

In reporting at the recent convention of the National Association of Motor Bus Operators an official of the Selective Service System pointed out that the needs of that service have so far required transportation for nearly 1,000,000 men to and from draft boards, induction stations, and army posts. Not all of these men have traveled by bus, but because of the economy of bus travel and the convenience and mobility of the service, the Selective Service System has made use of bus service to a very large degree. In September an agreement was concluded between the Selective Service System and representatives of the motor bus lines providing for reduced fares for the transportation of selectees in interstate and intrastate traffic. A similar agreement has been made with railroad representatives. It is estimated that, during 1942, selectee traffic alone will amount to between 200,000,000 and 300,000,000 passenger miles by all types of transportation. Military traffic, once men are inducted into the Army or have joined the Navy or other forces, is represented largely by furlough travel, although a very sizeable volume results from the normal shifting of groups of men from one camp or base to another.

COMMERCIAL MOTOR BUS IN FIELD MANEUVERS

One phase of Army traffic that so far has been slight in volume, but high in significance, is the use of commercial motor bus equipment in actual field maneuvers in coordination with the armed forces. There were two examples of this during the year. The first was a tentative experiment in January, during which 1,500 men were moved by bus from points in Arkansas to Camp Joseph T. Robinson. The second was a full dress experiment in connection with the recent North Carolina maneuvers of the first Army. On this latter occasion the 28th Division moved by highway from Indian-town Gap, Pa. to Lilesville, N. C. as a complete force of 18,000 fully

equipped men, with all supplies and munitions of war. This was the first time in our history that a four-square division with all equipment had moved entirely by highway. For this movement, 76 commercial buses carrying 2,500 men were used, as well as 70 commercial trucks and vans. Under Army orders for the duration of the movement, the chartered commercial equipment traveled in convoys, together with the 2,500 Army trucks, scout cars, and other combat units of the Division. Army officers pronounced the experiment a complete success and praised the efficient work of the commercial units.

BUS TRAFFIC VOLUME

The impact of the civilian phases of the defense program is best indicated by the increase of local bus passengers during the year. For example, local riding, a large percentage of it representing riding to and from defense plants, is up 8.9 per cent over 1940. In terms of passengers, this indicates that 324,000,000 more rides were furnished by local bus companies than during 1940.

Estimates for the year show that over 4,500,000,000 revenue passengers were carried by buses in 1941, approximately 400,000,000 of these in intercity and interstate travel, and the balance representing local and city riding. Another 4,000,000 persons were carried in charter and sightseeing service.

PRIORITIES AND NEW EQUIPMENT

The question of priorities on both new equipment and repair parts and supplies has caused the industry much concern. Some authorities believe OPM (Office of Production Management) and others charged with providing adequate armament supplies have lacked a full appreciation of the vital necessity for allotting the comparatively small quantities of raw materials necessary to keep public transportation in top-notch condition and efficiency. This applies equally to freight transportation by rail, water, or highway, as it does to the various methods of passenger transport.

THE MOTOR BUS INDUSTRY

In urging priorities for the bus industry, spokesmen pointed out that each pound of material, steel, copper, nickel, etc., used in the construction of buses, results in more than 12 times as much transportation service as does a pound of similar material in a private vehicle. Similarly, a pound of rubber in a bus tire provides more than double the number of passenger miles than it does if used in an automobile tire. Each gallon of gasoline used in a bus furnishes more than twice as many passenger miles of service as does a gallon of gasoline in a private vehicle.

Under OPM limitation orders, motor bus manufacturers can not at present assemble new vehicles at a rate greater than in the first half of 1941. It is feared this production capacity may be insufficient to keep pace with increased passenger traffic demands. Actual orders on the manufacturers' books are far in excess of any previous year in the entire history of the motor bus industry, but actual deliveries of new equipment have not kept pace with industry requirements, according to present indications. In 1940, new buses delivered totalled 17,207, including school buses as well as common carrier vehicles.

The bus companies have not been idle in the face of this growing shortage of equipment and materials. Junk yards and stock piles have been combed for every possible piece of material laid aside in palmier years that might be reclaimed for further use. Many hundreds of discarded buses sent to the graveyard a year or two ago have been resurrected, rehabilitated, and recalled to active duty. The whole problem is calling for the exercise of every last ounce of ingenuity on the part of the industry's engineering and maintenance experts.

SUBSTITUTE MATERIALS

From the engineering angle, one of the outstanding developments has been the ingenious way in which operators and manufacturers alike have adapted substitute materials to take the place of aluminum, nickel steel,

and other metals and alloys now on defense priority lists. For example, sheet steel in rolled shapes, and pressed and welded steel sections are being used extensively in place of aluminum. Steel sheets are being used for outside paneling and roof covering, also to replace aluminum. Interior aluminum panels have been changed to steel or fibre board and stanchion and grab-rail fittings to brass or malleable iron. Materials other than nickel are being used as substitutes in cylinder castings, such as copper chrome and copper chrome molybdenum. There seems to be good grounds for belief that satisfactory iron alloys for brake drums and exhaust manifolds can be developed which do not contain nickel or chromium. Plastics have already entered the bus picture in substitution for some of the lighter and precious metals used for both decorative and utilitarian purposes. Plywoods of various types are slated to find increased use. These changes have, in many cases, added to the weight of vehicles, but not as much as might be expected.

THE BUS INDUSTRY'S RESOURCES

In facing the problems that lie ahead, the motor bus industry can call upon the resources of approximately 3,500 operating companies. Of these companies, 2,300 are engaged in intercity service, 780 in city and suburban operation, and about 420 in various branches of charter-hire and sightseeing service. These 3,500 common-carrier companies jointly have 54,000 buses, divided as follows: 18,000 in intercity service, 33,550 in city and city-suburban work, about 2,450 in charter and sightseeing. Service is given over 343,300 miles of highway, itemizing at 315,000 miles of intercity routes and approximately 28,300 miles of city and city-suburban service. The industry as a whole operates about 2,000,000 bus miles of service annually, approximately 884,000,000 miles of which is in intercity service and the balance in local and suburban service, including sightseeing.

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SCHOOL BUSES

Operating revenues of the common carrier bus industry for 1941 will exceed \$475,000,000, with about \$200,000,000 representing revenue from intercity and long-haul riding, \$8,000,000 from sightseeing and charter hire, and the balance from local and suburban operation. The investment in the motor bus industry is now in the neighborhood of \$1,000,000,000. The industry gives employment to about 130,000 persons.

Increased local riding is reflected by still another factor, the increase, by some 30 odd cities, in the number of communities served entirely by motor bus. Out of a total of 1,077 cities with a population of 10,000 or more, there are now well over 605 that are served entirely by motor bus.

Expansion likewise has been continued in the school bus field. Advance estimates show there are now approximately 90,000 buses serving in various kinds of educational work, with the majority of these employed by public consolidated school districts throughout the United States. Over 4,000,000 school children are carried to and from their classrooms daily by bus. While this is not a high revenue-

producing field—many of the school fleets are owned by state or county school departments—it nevertheless represents a reservoir of bus equipment that could be pressed into service in time of need. There are approximately 1,300,000 miles of school bus routes, and some 44,000 schools provide bus service for their pupils.

THE MOTOR BUS AS A RECREATIONAL FACTOR

Government agencies, such as the Office of the Coordinator of Health and Activities Affecting National Defense, have emphasized the importance of vacation travel. In a recent statement, Paul V. McNutt, coordinator of the office just mentioned, said: "When the national defense program was initiated the President and the country as a whole recognized that safeguarding the nation is not wholly a matter of guns, bombers, tanks and warships. Travel, a paramount factor in recreational activity, is a potent stimulant to the national health which is vital to our manpower, defense production and morale. The maintenance of recreational travel is doubly urgent at this time."

COMMUNITY TRANSIT

BY JOHN A. MILLER

EDITOR, *Transit Journal*

RIDING AND REVENUE

Transit, the workingman's transportation in ordinary times, became the war worker's transportation in 1941. Even before the United States actively entered the war, the national defense program had caused an increase in riding of more than 5,000,000 transit passengers a day. Then, when hostilities actually commenced, the accelerated tempo of arms production and the numerous restrictions placed on private automobiles caused a further large increase in transit riding.

For the transit industry as a whole in the United States, the increase in

the number of passengers carried was about $8\frac{1}{2}$ per cent over the previous year, bringing the total to approximately 14,366,000,000, a ten-year record. Fares remained virtually unchanged; thus, there was an increase of about $8\frac{1}{2}$ per cent in the industry's gross revenue, bringing the total to \$852,508,000.

Increases in hourly wage rates, materials costs, vehicle-miles and taxes reduced the industry's net income despite the rise in gross revenue. Most important was the jump in hourly wage rates of transit employees from an index figure of 254.6 at the beginning of the year to one

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of 272.6 at its close. This was an increase of nearly 10 per cent, coinciding roughly with the rise in the average cost of living during the same period. In this connection it should be noted that the wage index has recorded a far greater increase over a number of years than has the cost of living index.

Along with the rise in wages went a substantial increase in the cost of operating materials. At the beginning of the year this index stood at 147, at the close, 159.

The effects of the higher wage and materials indexes were felt more acutely because of the considerable increase in the number of vehicle-

miles operated to accommodate the increased volume of riding. Preliminary reports indicate that the average increase in operating expenses for the industry as a whole was about 11 per cent. Expressed in other terms, the increase was from \$605,000,000 to \$673,481,000.

Because the increase in operating expenses was greater than the increase in gross revenue, the net revenue, before taxes, dropped slightly from \$180,000,000 in 1940 to \$179,000,000 in 1941. This situation was made worse by the fact that taxes rose 15 per cent from \$85,600,000 to \$98,000,000; thus, there was a drop of \$13,400,000 in the net revenue after taxes.

SUMMARY OF TRANSIT OPERATION IN THE UNITED STATES

	Operating Revenue Jan. 1-Dec. 31	Passengers Carried Jan. 1-Dec. 31	Miles of Electrified Track† as of Dec. 31	Miles of Trolley Bus Route as of Dec. 31	Miles of Motor Bus Route as of Dec. 31	Number of Passenger Rail Cars as of Dec. 31	Number of Trolley Buses as of Dec. 31	Number of Motor Buses as of Dec. 31
1890	\$ 90,617,211	2,023,010,202*	8,123*	0	0	32,505*	0	0
1902	247,553,999	4,774,211,904*	22,577*	0	0	60,290*	0	0
1907	430,687,858	9,583,081,000	34,382*	0	0	70,016*	0	0
1912	602,511,704	12,285,342,000	41,065*	0	#	76,162*	0	#
1917	763,325,092	14,726,914,573	44,835*	0	#	79,914*	0	39
1922	1,014,727,485	16,161,846,851	43,932*	22	685	77,301*	28	370
1927	1,084,439,961	16,855,435,276	41,967	31	18,007	70,309*	29	8,854
1932	745,323,819	11,745,985,108	34,742	276	26,604	64,585	235	16,693
1933	675,710,574	11,050,400,000	33,973	378	24,061	61,413	395	16,309
1934	710,374,526	12,103,200,000	32,028	467	24,933	58,225	448	17,411
1935	718,756,945	12,201,402,000	30,612	589	26,520	54,204	648	19,100
1936	765,756,000	12,984,842,000	29,319	850	27,717	51,730	1,154	22,104
1937	779,153,000	13,261,860,000	27,684	1,184	30,155	48,501	1,662	25,614
1938	744,091,000	12,663,167,200	26,185	1,474	32,042	45,466	2,002	26,477
1939	763,000,000	13,000,000,000	26,060	1,694	34,846	43,176	2,203	29,524
1940	785,000,000	13,225,000,000	23,249	1,935	39,994	40,515	2,836	32,602
1941	852,508,000	14,366,000,000	20,504	2,089	48,441	37,995	3,039	36,296

* U. S. Census.

† Does not include lines operating freight service only (for 1941 only).

Not available.

PHYSICAL CHANGES

Everything considered, changes in transit facilities and equipment were somewhat less extensive in 1941 than in other recent years. The explanation lies largely in the fact that the tremendous increase in riding produced by the national defense pro-

gram early made it evident that whatever new equipment could be procured would have to be used to provide increased service and could not be employed to replace existing equipment. The changeovers from one type of service to another made during the year were mostly ones to

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which the operating companies were already so far committed that it would have been impracticable to halt them.

STREET RAILWAY-BUS CHANGEOVERS

In the cities of more than 500,000 population, there was a changeover of about 200 miles of street railway trackage to bus and trolley bus route. Accompanying this was a slight decrease in the number of street cars and a corresponding increase in the number of trolley buses and motor buses. Los Angeles and St. Louis were the cities where the most extensive changeovers occurred. In the cities between 100,000 and 500,000 population there was somewhat more abandonment of street railways trackage than occurred in the larger cities and a correspondingly larger reduction in the number of street cars. Complete changeovers in such cities as Seattle, Rochester, Hartford, and Utica, along with partial changeovers in such cities as Atlanta, Fort Wayne, Louisville, Providence, and Memphis, accounted for most of the track abandonment. In the cities of under 100,000 population there was very little change in the extent of street railway facilities though there was considerable expansion of bus operation. The primary reason for the lack of change in the street railway situation in these cities was that changeovers had already eliminated most of the trackage and that which remained was retained on account of special conditions.

CHANGES IN TRANSIT FACILITIES

Rapid transit facilities were somewhat curtailed during the year as were those of the electrified suburban railroads. This was due in the first instance to the demolition of certain elevated railways in the city of New York, with accompanying scrapping of elevated railway cars, and in the second instance to the suspension of service by the Interurban Electric Railway operating from San Francisco to cities in the East Bay region.

For the United States as a whole, there was a reduction in electric surface railway track mileage from 17,830 to 15,213 and a reduction in cars from 26,634 to 25,405. Trolley bus progress was marked by an increase from 1,935 to 2,089 in route mileage and from 2,386 to 3,039 in vehicles. Motor bus route mileage increased from 39,994 to 48,441 while the number of vehicles increased from 32,602 to 36,296. The rapid transit track mileage dropped from 1,228 to 1,217 and the number of cars from 10,939 to 9,865.

As a result of these various changes, the total number of transit vehicles in the United States increased from 75,953 to 77,330. The total of track and route mileage increased from 65,178 to 71,034. From these figures it would appear that the industry increased the mileage of its routes to a considerably greater extent than it increased its equipment. While this is true from a strictly statistical standpoint, it is notable that the increase in route mileage came largely from the establishment of many comparatively long routes with infrequent service, while the increase in the number of vehicles was largely due to the increased demands for service on previously established routes.

VEHICLE SHORTAGE

Over the past ten years there has been a fairly steady decrease in the number of vehicles owned by the industry in proportion to the number of passengers carried. One cause of this has been the substitution of motor buses or trolley buses for street cars. Only enough of the new vehicles have been bought to meet current needs, whereas almost every system formerly carried a fairly large surplus of street cars in storage. Then, too, there has been a deliberate effort to reduce the property account by disposing of surplus equipment.

Thus the advent of the war emergency in 1941 found the industry with a relatively small number of spare vehicles with which to handle a sharp increase in demand for service. On the average, in 1941, each vehicle

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carried about 187,000 passengers during the year, as compared with about 169,000 in 1931.

A possible shortage of vehicles was foreseen long in advance by the transit industry, and energetic efforts were made to secure additional equipment. Almost immediately, however, these efforts ran into difficulty because of the shortage of aluminum. This necessitated a pause while vehicle manufacturers worked out new designs employing other materials. By the time this had been done the other materials were scarce, too, and could be secured only by means of priority orders.

Granting of an A-3 priority rating for materials for the manufacture of new motor buses and trolley buses served to help the situation somewhat, but it was accompanied by an unfortunate restriction which limited the number of units that could be built to the "going rate" of the early part of the year. Similarly, the granting of an A-10 priority rating for repair parts and maintenance materials was a help, but this too was accompanied by restrictions, involving in this instance the dollar volume of purchases of similar parts and materials in 1940. Later the restrictions on the production of new buses and trolley buses were ameliorated somewhat but not removed. Those on repair parts and maintenance materials were ameliorated by permitting an allowance for any increase in price since 1940.

NEW ROLLING STOCK

Equipment orders placed by the transit industry in 1941 set an all-time record of more than 8,000 vehicles costing a total of \$65,000,000. A total of 522 electric railway cars was ordered, about the same number bought in 1940 but above any other recent year. Trolley bus orders totalled 417, a substantial gain over the preceding year. It was the huge volume of orders for motor buses, however, that pushed the year's total of equipment orders far above the highest previous figure in the history of the transit industry.

All of the electric rail cars ordered in 1941 were of the Electric Railway Presidents' Conference Committee type except 10 interurbans for the Chicago, Aurora & Elgin Railroad. The Philadelphia Transportation Company ordered 110 P.C.C. cars, the St. Louis Public Service Company and the Pittsburgh Railways ordered 100 each, and the Capital Transit Company 97. No orders were placed during the year for subway-elevated cars nor for multiple-unit cars for the electrified suburban service of the trunk line railroads.

Trolley bus orders in 1941 were 12 per cent above those of the preceding year, making 1941 the third highest year in the history of trolley bus development in the United States. Boston Elevated Railway was the leader in this activity with orders for 85 new vehicles of this type. Milwaukee Electric Railway & Transport Co. was second with 50, while Indiana Service Corp., Fort Wayne, was third with 40.

In general the progress in the trolley bus field was marked by numerous small orders rather than a few large ones. A total of 20 operating companies, of which all but one were already active in this field, placed orders for new equipment. The single new purchaser was the Akron Transportation Co. which inaugurated its first trolley bus operation on Nov. 12.

Orders for new motor buses far exceeded those of 1936, the highest previous year, reaching a total of approximately 7,300 as compared with only 4,700 five years ago. The largest single buyer was Public Service Coordinated Transport of New Jersey, which ordered 277 buses during the early part of the year and an additional 210 in December. Many other companies, faced with large increases in riding because of war activities, placed orders for additional vehicles to augment their existing bus fleets.

The most serious aspect of the situation was that the bus manufacturers were unable to keep pace with the orders, due largely to the difficulties of obtaining the necessary materials. In contrast to the orders for 7,300

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motor buses, the actual production of the manufacturers was not much over 5,500, leaving a back-log of about 2,000 unfilled orders at the end of the year.

FUTURE PROSPECTS

Drastic cuts ordered in the production of new automobiles will undoubtedly cause a shift from private transportation to public transportation. Many of the people who would normally have bought new automobiles in 1942 may be able to continue the use of their old ones and not be forced to abandon the use of private transportation, but this will curtail the supply of second-hand autos, and many of the prospective purchasers of such vehicles will have to turn to the use of common carriers.

Then, too, the government has imposed strict limitations on the sale of new automobile tires. Buses, fire and police apparatus, ambulances and certain other essential services will be able to secure new tires, but the ordinary automobile owner will probably have to get along as best he can for a considerable period with what tires he now has. This can not help

but cause a tremendous shift from the use of private transportation to the use of public transportation. It will not come immediately, but will develop slowly as more and more people experience difficulty in getting tires for their autos.

The burden that may thus be placed upon the transit industry is of colossal proportions. For example, the management of a transit company in an Eastern city of moderate size has estimated that 40,000 persons drive to work every day by private automobile in that city. If only one quarter of them should shift to public transportation, it would mean 10,000 additional passengers to be carried back and forth every day, most of them during peak hours. Since the company's equipment is already being used almost to capacity at these hours, an additional fleet of at least 200 50-passenger vehicles would be required. With similar situations existing in hundreds of other cities, the problem facing the transit industry is exceedingly serious. Fortunately, there are indications that this is understood by the government, and that measures will be taken to enable the industry to do the job.

MERCHANT MARINE

By PETER BAIN

CONSULTING NAVAL ARCHITECT

DUAL ROLE OF THE MERCHANT FLEET

The American merchant marine as such was afforded little opportunity to exercise its normal functions during 1941. From Jan. 1 onward, its objective became less the building up and maintenance of trade routes and services and more that of naval auxiliary for the overseas transportation of essential and strategic materials and equipment necessary for national defense.

The year opened with no diminution of the prospect of our being sooner or later involved in a world war. Our eventual participation found

us less surprised than shocked by Japan's duplicity and attack on Dec. 7 on our Pacific territories. All through the year, the Navy Department sped the acquirement of merchant ships, not only those employed in ocean services but from the ranks of newly completed vessels and others still undergoing construction and outfitting; thus, hundreds of our seagoing merchantmen, including the trans-Atlantic liners *America*, *Manhattan*, and *Washington*, were transferred to Army and Navy services.

As in an emergency or during war-time, a nation's merchant marine automatically comes under the control

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and direction of the naval authorities, it naturally followed during 1941 that our merchant fleet, whether Maritime Commission or privately owned, was in great measure employed in services of both economic and strategical importance.

While far from neglecting the commercial side, the United States Maritime Commission since its establishment in 1936 has not failed to stress the equally live consideration that merchant shipping constituted a most essential element in the development and carrying out of strategical plans and preparations bearing on national defense. During the year, the Commission continued to operate with the advantage of a board of management whose constituent all along has been judiciously blended of representatives from both ship services, merchant and naval. A further and equally distinct advantage enjoyed by the Commission belongs to the circumstance that our merchant marine is being recreated—rebuilt from keel to truck—with new ships, powerful, speedy, commodious, modernly equipped and manned, and, therefore, competitively efficient in every respect.

Structural and equipment detail are planned to meet all contingencies that experience of long years of seafaring have shown to be potentialities. The structural incorporation of gun emplacements and other defensive aids and gadgets on numerous units of our new merchant ships during peacetime may be noted as gestures and accomplishments tending to simplify and accelerate conversions of vessels included in the transfers already indicated. The circumstance that little, if any, new construction toward supplementing the merchant marine was in process during 1941 or immediately following its close, aside from that directly or indirectly of Maritime Commission account, leads to the conclusion that this body continues to be the dominant factor in the American merchant marine sphere. Being so, however, is neither disability nor hindrance to progressive achievement as the accompanying data demonstrates, nor is it hindrance or handi-

cap to private ownership or enterprise for, through construction subsidies, operating differentials, and far from onerous borrowing facilities, every encouragement toward cooperation with the Commission is afforded.

Preliminary steps taken by the Maritime Commission during the immediately preceding peacetime years, as the result of a far-sighted policy, disclosed a minimum of preparatory work to be done, which, while altogether necessary, did not retard essential new activities forced upon us as an actual belligerent. According to a year-end review by the National Council of American Shipbuilders, on Jan. 1, 1942 there were under construction in the shipyards of the country 833 ocean-going merchant ships of 10,000,000 deadweight tons, inclusive of several others for which contracts were held although not actually on the ways. Expansion of existing shipbuilding and repair facilities as well as the establishment of entirely new yards and plants, of necessity had kept pace. Thus, in February there were but 170 building ways in the country capable of accommodating steel vessels of 300 feet or more in length in 45 private shipyards. At the year-end, a score more, 65 altogether, possessed 407 building ways on which seagoing vessels were under construction. Naturally, the increase in building-way provision resulted in the relative improvement and expansion of fitting-out basins and piers, dry docks, fabricating and machine shops, power plants, foundries and the numerous others incidental to the installations on board a completed and well-found ship.

BROAD RANGE EXPANSION

Based on a current survey of the condition of the American merchant marine and its replacement program, with emphasis on what the program has meant in preparing for war, Rear Admiral Emory S. Land, chairman of the United States Maritime Commission, on Dec. 28, issued a statement relative to the nation's commercial ship program as disclosed in the official records. Private shipyards ca-

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pable of building oceangoing commercial vessels 400 feet or longer showed an increase of approximately 500 per cent in production capacity, exclusive of the yards on the Great Lakes. Authorizations and appropriations had been made covering construction and delivery into service of more than 1,400 oceangoing cargo carriers, in addition to about 150 accessory craft of other types, during 1942-1943, involving an estimated total investment of approximately \$3,000,000,000. Nearly 1,000 of these were under construction or contract, the balance awaiting only the availability of propulsion equipment in the placement of construction contracts.

As auxiliaries in Army and Navy services, the Commission at the year-end had acquired and transferred approximately 175 large vessels aggregating around 1,250,000 tons, besides numerous smaller craft. All of the 198 vessels remaining of the first World War laid-up fleet had been utilized, most of them having returned to service through sale or charter after reconditioning. Approximately 80 merchant vessels of foreign registry laid up in United States ports were requisitioned and placed in service, quite a number of them having been reconditioned.

In cooperation with the Commission, shipyards located on all coasts of the nation have established training schools for workers to meet a probable peak requirement of 600,000 to 700,000 employees late in 1942. Ordinarily, less than 100,000 skilled workers have been available. Training facilities, too, have been doubled to supply ratings for manning the constantly expanding merchant fleet. It is estimated that 6,300 licensed officers and 25,000 trained seamen will be available by Dec. 31, 1943, constituting about two-thirds of the additional number ultimately required. Establishment of a Division of Emergency Shipping to direct, expedite, and coordinate the nation's merchant marine tonnage resulted in marked acceleration of defense materials im-

portation and shipment of war aid to our allies.

Our shipbuilding industry is far ahead comparatively with its status in the first World War. A ship-a-day stage was reached in launchings in December. During the first quarter of 1942, the Commission's schedule calls for the laying of 148 keels, the launching of 125 vessels, and delivery of 71 altogether completed. The second quarter of 1942 is expected to bring the Commission's program to the two-ships-a-day stage, and with an anticipated rise in output tempo, delivery into service has been set thereafter at an average of two ships per day through 1942 and 1943. By Dec. 31, 1943, an estimated delivery of 13,500,000 deadweight tons will have been achieved. The new merchant ships of the emergency program are being delivered into service in from 4½ to six months after keel-laying, largely because welding has materially displaced riveting and because of the utilization of mass production procedure.

QUICKENED TEMPO OF CONSTRUCTION AND TRAINING

When it became apparent late in 1940 that the United States must eventually become the arsenal of supply for the nations battling the Axis Powers, our ship construction effort was pyramided early in 1941 on the original 500-ship long-range plan. In addition, the long-range program of standard Maritime Commission design ships was expedited to the point where approximately 200 keels of these modern, efficient, and fast vessels were laid and of which 150 were launched and 125 delivered. On account of this advance construction, the original schedule of 50 ships per year has been raised to approximately 100 of the Commission's standard designs.

In expansion of its training program to supply officers and men to operate the rapidly expanding merchant fleet, the Maritime Service, which is operated jointly by the Maritime Com-

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mission and the Coast Guard, added two training schools during 1941, at St. Petersburg, Fla. and at Port Hueneme, Calif. The fleet of training ships rose to 10 during the period.

On Jan. 1, 1941, there were 156 passenger vessels of 1,100,356 gross tons in the American merchant marine. Of these totals, 141 of 1,039,360 gross tons were oceangoing and 15 of 60,096 were Great Lakes craft. In the cargo carrier category, there were 705 vessels of 3,590,276 gross tons, of which total 676 were oceangoing of 3,481,966 gross tons and 29 were Great Lakes craft of 109,310 gross tons. Of 362 tankers, 353 of 2,606,265 gross tons were oceangoing and nine of 33,768 gross tons were on the Great Lakes. Of the bulk carrier type, such as ore ships, there were 411. Of these, 357 of 2,075,513 gross tons were on the Great Lakes and 54 of 275,861 were oceangoing. The first oceangoing vessel ever built at Albany, N. Y. slipped into the Hudson River on April 10—a 12,000-ton freighter of welded construction was built in the yard of her owner, Cargill Grain Co. Of 425 feet length and 60 feet beam, the draft when fully loaded will be 28 feet.

On April 11, President Roosevelt by proclamation ordered the reopening of the Red Sea and the Gulf of Aden to American shipping. There is reason for optimism in the shipping world, even today, according to the chairman of the Cunard-White Star Line. At the annual meeting in April, 1941 he claimed that shipping can get a fair return in peacetime, although, prior to September 1939, there existed a condition of no peace but instead a species of near-war which produced a steadily gripping restraint on the international movement of trade and commerce. Special reference was made to the financial record of the liner *Queen Mary*. The chairman hazarded the opinion that it may not generally be appreciated that that big ship had been very successful right from the start of its career. Since 1922, no steamer had made so much money in any successive year as the *Queen Mary* had done prior to September 1939.

BRITISH, ALLIED AND NEUTRAL SHIP LOSSES

Disclosure was made on May 10 that British, Allied, and neutral ship losses had passed the 6,000,000-ton mark. The Admiralty's statistics in summary indicated the price exacted by German mines and air and sea raiders on British ships and ships in Britain's service to have been, since the war began, 1,443 merchantmen of 5,961,044 tons. The foregoing did not include an unspecified number of vessels lost in the Dunkerque withdrawal from France in May and June 1940. As these losses amounted to 117,186 tons, the total British, Allied, and neutral losses became 6,078,330 tons. For the first four months of 1941, a total of 368 ships aggregating 1,617,359 tons was sunk. On the other hand, the Admiralty declared that the Axis had lost 2,912,000 tons by sinking, capture, or scuttling since the start of the war and that 600,000 tons of these losses had been registered in the immediately preceding six weeks.

Germany was credited with having lost 1,756,000 tons, Italy 1,090,000 tons, besides another 66,000 tons "useful to the enemy" captured or destroyed. A breakdown of the 1,443 loss total since the start of the war on Sept. 3, 1939 indicated a British loss of 3,810,541 tons and an Allied and neutral loss of 2,150,503. The number of ships involved was 885 and 558 respectively.

The earliest opening of the Great Lakes to industrial navigation in the present century was reported in Cleveland on April 3 by the Pittsburgh Steamship Co., a subsidiary of the United States Steel Corporation. Due to the early opening, the steel industry expected to move between 72,000,000 and 73,000,000 tons of iron ore down the Lakes during the season, thereby eclipsing all previous years by a substantial tonnage margin.

SHIP WARRANTS

The House of Representatives on May 20 adopted a drastic new emergency program for United States shipping, following which, it sent to the Senate a bill empowering President Roosevelt to control the move-

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ments, cargoes, and rates of all ships registered or doing business in this country. The bill had two main objectives: forcing United States vessels to cooperate with the Administration's policy of building up our national defense as well as that of the belligerent democracies, and to control import commodity prices by limiting transportation costs. During the partial emergency or until June 30, 1943, the bill provided that ships must have warrants in order to enjoy free use of United States facilities for loading, discharging, lighterage, or storage of cargoes. Without these warrants, ships must wait their turn (and their turn may never come) so as to procure fuel or use dry docks for repair services. Coincidentally, and just here was the nub clause in the bill, in order to get the warrants from the Maritime Commission, shipowners were required to agree to act as they may be directed with respect to the trades in which their vessel will be employed, the voyages which they will undertake, the class or classes of cargo or passengers to be carried, the maximum rate of charter hire and such incidental and supplementary matters as may appear to the Maritime Commission to be necessary or expedient.

On May 29, the House Merchant Marine Committee recommended legislation authorizing construction of 13 new Coast Guard cutters at an estimated cost of \$60,000,000. Ten of the vessels were to be of the usual type to cost about \$3,000,000 each and three would be specially designed for ice-breaking duties at a cost of \$10,000,000 each. The Committee intimated that the cutters were requested as an integral part of the national defense program.

On June 5, the Maritime Commission automatically gained broad powers over shipping and shipyards under the President's proclamation of an unlimited emergency by virtue of Section 37 of the Shipping Act of 1916. The principal effect of the powers acquired by the Commission through the last World War legislation was to extend its control over

transfer of registry from ships operating under the American flag to all vessels owned by Americans whether flying the American flag or otherwise. It meant that the Maritime Commission gained control over more than 200 vessels that have gone from American registry since the fall of 1939. These vessels had been able to disregard the prohibitions of the Neutrality Act. Similarly, the new powers give the Commission broad authority to keep American shipyards under American control and prevent them from engaging in work not sanctioned by the Government. Any agreement permitting control of a ship or shipyard to pass to foreign interests shall be deemed unlawful. The powers acquired cover leases as well as sales.

President Roosevelt on June 6 signed the bill authorizing requisitioning by the government of all foreign merchant vessels lying idle in American harbors. Immediately thereafter, he issued an executive order empowering the Maritime Commission to take over such vessels and operate or otherwise dispose of them in the interest of national defense. The vessels and nationalities consisted of 39 Danish of 140,871 tons; two German of 8,999 tons; 28 Italian of 168,744 tons; two Estonian of 3,837 tons; 11 French, inclusive of the *Normandie*, of 131,939 tons; one Lithuanian of 1,255 tons; and one Rumanian of 3,495 tons.

Figures on losses sustained by Norway's merchant marine up to March 1 indicated that 159 vessels of 562,521 gross tons had been destroyed by war action since September 1939. Six other vessels, freighters of 20,805 gross tons, were wrecked or lost through other causes.

President Roosevelt on July 4 signed a bill to permit deeper loading of tankers carrying gasoline and oil to Atlantic ports. The bill amended an existing law permitting the Secretary of Commerce during the unlimited emergency "to establish or mark load lines on coastwise vessels which will be above the actual line of safety but will give a lesser

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freeboard than the load lines hitherto in operation."

The Ship Warrants Act was signed by President Roosevelt on July 15. Ignoring Germany, Japan, and Italy, but conferring with American republics concerned, the United States Government suspended for the duration of the emergency the International Load Line Convention signed at London on July 5, 1930. Under President Roosevelt's proclamation, issued Aug. 9, about 700 vessels in oceangoing services of the United States would be able to carry, on the average, a little more than 6 per cent in excess of that hitherto allowed. It was stressed that deeper loading would still be well within the margin of safety according to the records of thousands of voyages made before adoption of the 1930 convention.

Acting under a new law, President Roosevelt on Aug. 27 signed an executive order authorizing the Maritime Commission to issue warrants to some ships, giving them priority in the movement of materials needed for national defense.

NEW YORK STATE BARGE CANAL

A shortage of seagoing vessels in coastwise trade because of the national emergency caused a net loss of about 272,000 tons on New York's 800 mile barge canal system during the 1941 season. As many canal barges were available as normally, but they were unable to obtain freight because of diversion of seagoing craft to lanes distant from canal traffic. Freight moved on the system totalled 4,403,540 tons up to Nov. 22, as compared with 4,675,667 on the same date in 1940, the latter's final total of 4,768,000 tons having set a record for the system's 23 years of operation.

Canal traffic in New York State is 150 years old, dating back to the first waterway improvements made in 1791. The original Erie Canal was opened in 1825 and the present system in 1918. In the past decade, more than \$22,000,000 in Federal funds has been spent on the system's improvement.

ST. MARY'S FALLS CANAL

A record-breaking volume of 111,121,684 tons of freight moved through the St. Mary's Falls Canal in a 259-day navigation season from April 1 to Dec. 15. It represented an increase of 21,263,365 tons over 1940 and exceeded the previous record of 92,622,017 tons in 1929. Vessel passages totalled 25,865. The American locks handled 108,349,738 tons of freight, and the Canadian locks which operated 238 days, 2,771,946 tons. December freight was 2,135,602 tons, inclusive of 1,243,353 tons of iron ore.

GREAT LAKES SHIPPING

Great Lakes vessels moved 18.3 per cent more bulk freight to raise the record established in 1940. In the 254-day navigation season from April 3 through Dec. 12, loadings of iron ore, coal, limestone and grain were 169,020,975 net tons against 142,874,985 in 1940. Records were established in iron ore, 89,730,323 net tons; bituminous coal 49,733,234 net tons; limestone, 17,633,448 net tons. Grain shipments of 11,387,480 net tons did not approach record proportions. Recognizing the increasing bulk traffic in petroleum products on the Great Lakes, oil statistics compiled for the first time disclosed that 33 United States and 34 Canadian tankers in the 1941 season moved 9,387,060 net tons or 68,948,523 barrels.

LIBERTY OR EMERGENCY SHIP PROGRAM

There undoubtedly is no other phase of the nation's construction effort that requires so many diversified types of engineering ability as does the construction and operation of the modern ocean-going ship. In the United States in 1936, there were but 10 shipyards exhibiting some degree of activity with a total of 46 building ways large enough to take care of vessels of 400 feet length. Due to the increased activity caused by the Maritime Commission's long-range program of 50 ships a year for ten years, the number of yards building merchant ships had grown by January 1941 to a total of 18 with 70

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ways. In many of these, however, naval construction was also in progress. This latter was the country's shipbuilding capacity when President Roosevelt ordered 200 merchant vessels constructed with all possible speed. Not only ships but the facilities to build and equip them had to be provided.

Hardly had negotiations been completed for the creation of seven new yards with 51 ways to build the 200 EC-2 ships called for by the President and known as the Liberty ships, and the requisite contracts awarded, when the President, under the terms of the Lease-Lend Act, authorized the Maritime Commission to build 222 more merchantmen. Of these, 112 were to be of the EC-2 or Liberty type. These added to the already-noted 200 brought the number to 312 with the understanding that all would be in service by Dec. 31, 1943. It became expedient to increase the number of yards from seven to nine and provide for a total of 79 ways in these yards. The first keel was laid on April 30.

In considering locations for the new yards the matter of labor supply was of primary importance. Their distribution also permitted the tapping of equipment resources in practically all of the more prominent industrial centers as well as the utilization of plant facilities in more isolated sections. Locations chosen for the new shipyards were Baltimore, Wilmington, N. C., Wilmington, Calif., Mobile, New Orleans, Houston, Richmond, Calif., Portland, Ore., and South Portland, Me. All of the 312 vessels are single screw freighters, each being driven with a triple expansion, direct acting, surface condensing engine of about 2,500 indicated horse power at 70 revolutions per minute. The engine cylinders are 24½" x 37" x 70" diameter by 48" stroke. Steam is supplied by two watertube boilers at 220 pounds working pressure and of 450 degrees F. superheat.

While the Maritime Commission continues to build its C-1, C-2 and C-3 cargo ships, tankers and combination passenger-cargo carriers, which

have the reputation of being the most efficient on the seas today, it became early apparent that the emergency ships would have to be of an altogether different type than the above to meet the time limit set. The 312 ships, being of identical design and specification, paved the way for a modified form of mass production; in other words, plans were laid for as much pre-fabrication as possible before construction on the ways was actually begun. Again, 312 sets of propulsion equipment would have overwhelmed the nation's steam turbine and gear manufacturers who were already loaded up with equally urgent defense orders. By reverting to the reciprocating steam engine as the propulsion medium, it was realized that the facilities of many large engine builders and general engineering plants could be drawn upon for the required service. It, too, was realized that manufacturers of steam type auxiliary equipment had not in recent times been operating at full productive capacity. To make the emergency ships all-steam equipped, the various auxiliaries such as pumps, winches, and steering engines took the places of the more up-to-date electrically operated units.

To get an idea of what equipment is involved in the 312 emergency ships, it is only necessary to point out, aside from the ships themselves and the main propelling engines, that 624 boilers, 312 main condensers, 3,120 deck winches, 312 steering engines, 312 windlasses, 936 KW electric generators, 312 centrifugal circulating pumps, 2,808 independent steam-driven pumps, and 312 small electrically-driven pumps also were required. In addition, there were 312 main air pumps, 624 bilge pumps, and 312 evaporator feed pumps driven off the main engines. Plants throughout the country have been making deliveries of the foregoing units on schedules that synchronize with construction work in the shipyards.

At the year end, work of every description on and for the emergency ships was well ahead of schedule. The emergency ships, although not equal

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to those of Maritime Commission standard design, are larger than most of those constructed in 1917 and 1918. They have two complete decks, a raked stem and a cruiser stern. The engines and boilers are located amidships in one compartment. The hull design calls for seven main bulkheads, watertight to the upper deck and providing five cargo holds. Further subdivisions provide deep tanks for water ballast or dry cargo in No. 1 hold, and for water ballast, oil or dry cargo in No. 4 hold. Three cargo masts and one signal mast with telescope topmast, all of steel, serve to give the vessels the necessary utilitarian effect to an attractive profile. They are 427 feet long on the water line of 57 feet extreme width, and 37 feet 4 inches molded depth to upper deck. On a mean draft of about 27 feet 8 inches, the total displacement is 14,100 tons and the deadweight 10,500 tons, with approximately 9,150 tons deadweight for cargo. The total bale capacity is approximately 468,000 cubic feet. Their normal speed will be rather better than 11 knots.

Also of emergency type, more or less similar to those described, are 60 vessels being built in two American yards through direct order from the British Government. Fourteen ways have been set up to build these ships which differ from the EC-2 in that they will have steam supplied by three coal-burning Scotch marine boilers instead of two oil-fired watertube boilers. In the comparatively brief period of four years, our ship-building capacity may be said to have increased fourfold.

Facilities for production of steam turbines and gears for merchant ships, calling for the investment of \$50,000,000, constituted a noteworthy development in merchant marine expansion during 1941. Four plants were included in the comprehensive program, approved by the Maritime Commission and financed under lease agreements by the Defense Plant Corporation with RFC funds. They were: Westinghouse Electric and Manufacturing Co., Lester, Pa., \$22,000,000; General Electric Co., Erie, Pa. and

West Lynn, Mass., \$24,500,000; Allis-Chalmers Manufacturing Co., West Allis, Wis., \$2,250,000; De Laval Steam Turbine Co., Trenton, N. J., \$1,250,000. These expanded plants, in addition to one other already enlarged by the Navy Department authority, are expected to produce for Maritime Commission cargo ships and tankers nearly 250 propulsion units annually. These, it is believed, will be sufficient to equip standard "C" design vessels now under order by the Commission in the expanded building program extending through 1943. Production from the new facilities is expected in September 1942. Through the additional facilities for production of turbines and gears, the Maritime Commission hopes to obtain enough of these units to permit construction of fewer emergency design cargo vessels and an increased number of faster, more efficient standard design ships. It is estimated that the foregoing expansion of production facilities will double the present supply of turbine power units available for merchant ship construction, without interfering in any way with production required for the Navy.

MERCHANT MARINE PERSONNEL TRAINING

Expansion of the war training program of men for the merchant marine was expedited on Dec. 19 by the addition of three vessels to the training fleet of the Maritime Service. The additions consisted of two former passenger liners acquired by charter and a private yacht acquired by gift. Three former passenger liners were being refitted for training purposes and a new Liberty ship under construction was assigned to the new war-time training fleet. When these latest acquisitions become available, the fleet will embrace a total of 18 ships.

In announcing the charter from the Eastern Steamship Lines of the 5,000-ton liners *Boston* and *New York*, the Commission placed emphasis on speed in increasing its training facilities. The *Nenemosha*, a

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speedy, steel hull, Diesel driven private yacht, 115 feet in length, was the outright gift of Mrs. Jessie Ball du Pont. All three vessels are late model craft. The *Boston* and *New York* were built at Sparrows Point, Md., in 1924, and the *Nenemosha* at Newport News, Va. in 1925. The *Boston* and *New York* are 385 feet in length, 72 feet beam, and 21 feet in depth. Their engines develop 2,700 horsepower.

Three other 6,000-ton Atlantic coastal passenger liners, the *Alleghany* and *Berkshire* recently purchased from the Merchants and Miners Transportation Co. of Baltimore, and the *City of Chattanooga* from the Ocean Steamship Co. of Georgia, were expected to be ready to join the training fleet early in the new year. The *Alleghany* and *Berkshire* are 350 feet long and were built at Kearny, N. J., in 1923. The *City of Chattanooga* is 380 feet long and was built at Newport News, Va. in 1923.

The new Liberty ship, a 10,000-ton vessel still on the ways, is being redesigned as a floating school ship. She will be christened the *American Mariner* and will join her two companion ships, the 7,000-ton vessels *American Seaman* and *American Sailor* already with the training fleet. Two new station ships, the *North Star* and *Sea Love*, have been added to the roster, while three sailing craft, the square-riggers *Joseph Conrad* and *Tusitala* and the auxiliary schooner *Vema* see service out of the training stations. Four State Maritime Academy ships, *Empire State*, *Bay State*, *Golden State*, and the *Keystone State*, also belong to the Maritime Commission training squadron.

The training fleet is operated in conjunction with its shore training stations for apprentice seamen at Hoffman Island, New York, St. Petersburg, Fla., Swinburne Island, New York, and Port Hueneme, Calif. Special schools for radio operators and cooks and stewards are located at Gallups Island, Boston. Schools for prospective officers are operated at Fort Trumbull, New London, and Government Island, Alameda, Calif.

Schools for seamen who have completed their training and are awaiting assignments are maintained at Gallups Island, Swinburne Island, Government Island, and St. Petersburg. All of the apprentice seamen units are operated by the United States Maritime Service, an agency of the Maritime Commission, under the Commission's rules and regulations and at its cost, and administered for it by the United States Coast Guard. The Commission also maintains an officer training system which operates cadet schools in New York, New Orleans, and San Francisco. All cadets are members of the Merchant Marine Reserve of the United States Navy Reserve.

Approximately 40,000 seamen and 10,000 licensed officers will be required in 1942 and 1943 to man the 1,200 new ships now under construction. The Maritime Commission contemplates the training of a substantial share of these men and expects to obtain the remainder from among experienced seamen who have taken temporary positions ashore. Existing facilities care for more than 1,000 enrollments each month. Prospective officers from seamen ranks are paid \$99 per month while training; cadets are paid \$65 per month, and are furnished quarters and subsistence, but must provide their own clothing and textbooks; apprentice seamen are paid from \$21 to \$36 per month and radio operators from \$36 to \$60 monthly with quarters, subsistence, clothing, medical and dental care. In all cases, transportation by public conveyance is furnished from the point of enrollment to the school to which the enrollee is assigned.

SUMMARY OF CONSTRUCTION ACTIVITY

A comparison of merchant ship construction activity in the United States, with its monthly accelerating pace, shows that on Dec. 1, 1941 there were being built to American Bureau of Shipping classification a total of 1,078 vessels of 6,392,930 gross tons, of which 819 of 6,075,915 gross tons were seagoing, 21 of 212,300 gross tons were

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for Great Lakes service, 236 of 104,495 gross tons were miscellaneous, one of 40 gross tons was composite, and one of 180 gross tons was of wood. The foregoing compares with a Jan. 1, 1941 summary of 283 vessels of 1,551,878 gross tons, also to American Bureau of Shipping classification, of which 179 of 1,494,890 gross tons were seagoing, one of 6,000 gross tons was for Great Lakes service, 99 were mis-

cellaneous of 50,268 gross tons, one was composite of 40 gross tons, and three of 680 gross tons were of wood. Five oil tankers and one ferry aggregating 46,750 gross tons were also under construction in American shipyards. It should be noted, however, that on Dec. 1, for British Government account, 57 vessels aggregating 387,600 gross tons were under construction in two American shipyards.

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BY ANDREW F. HAIDUCK

CHIEF ENGINEER, BELLANCA AIRCRAFT CORPORATION

GENERAL

Stimulated in large part by the increasing demand of the national defense effort, civil aviation again made record making gains in all of its phases in 1941. However, our envelopment by war in December made the future of any branch of aviation not allied with the defense effort very bleak for the duration. At the end of the year civil aircraft production of types suitable for private flying was virtually ended although the increasing pinch of priorities had already enlisted many such manufacturing establishments into the production of component parts for military aircraft. In this manner many of the civil aircraft manufacturing facilities were diverted to defense production.

With time a priceless ingredient, the airlines were utilized to the utmost by defense industries. Under this impetus approximately 4,360,000 passengers were carried in 1941, an increase of 36.8 per cent over the total of 3,185,278 for 1940. The mileage flown increased from 119,517,000 in 1940 to an estimated total of 142,541,000 in 1941. Air mail poundage of approximately 45,000,000 pounds for the year represented a 34.2 per cent gain over 33,800,000 in 1940. Air express increased 58.5 per cent from the 14,188,178 pounds in 1940 to 22,500,000 pounds in 1941. The increasing role of the airlines in the war effort was emphasized in President Roosevelt's executive order of Dec. 13, 1941, put-

ting all civil aviation facilities under the control of the War Department.

The greatest gain for the year was in the civilian pilot roster which passed the 100,000 mark, representing an increase of more than 60 per cent over the 1940 total of 63,113. This was due almost entirely to the training program of the Civil Aeronautics Administration, which grew in importance as a feeder of pilots and instructors to the military forces.

The number of certificated civil aircraft increased from 17,500 to approximately 27,500 during the year. A substantial part of this gain was accounted for by trainer airplanes used in the C.A.A. program.

The C.A.A.'s first airport program got under way during the year with 385 defense landing areas designated for construction or improvement. At the end of the year there were in operation 32,487 miles of lighted airways equipped with radio ranges, communication, and weather reporting facilities.

MILEAGE OF SCHEDULED AIR TRANSPORTATION

Domestic air carriers flew an estimated total of 142,541,000 revenue miles in 1941, an increase of approximately 19 per cent over 119,517,000 revenue miles in 1940. The total for 1941 was obtained by the addition of the actual monthly operations for each month from January to October inclusive, plus the estimated opera-

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tions for November and December, adjusted for seasonal variations.

In October alone the revenue mileage figure was 12,200,352, an increase of 14.72 per cent over the same month in 1940. American Air Lines Inc. led with a total of 2,949,224, followed closely by United Air Lines Transport Corporation with 2,516,554 miles. Third and fourth were Transcontinental and Western Air Inc. and Eastern Air Lines Inc. with 1,750,424 and 1,738,430 miles, respectively. These four operators accounted for approximately 73.4 per cent of all revenue mileage flown. Fifth place went to Pennsylvania Central Airlines Corporation with 620,866 miles flown.

The percentage increases over October 1940 in revenue miles flown by each of the five operators above were: American, 8.74; United, 10.97; Transcontinental and Western Air Inc., 9.44; Eastern Airlines, 18.95; Pennsylvania Central, 58.65. In September, Pennsylvania Central Airlines Corporation flew 67.46 per cent more revenue miles than it did the same month in 1940.

On June 30, 1941 the air carriers had in operation on all routes, including domestic, international and territorial, a total of 460 aircraft and a total of 23,999 persons employed. Corresponding totals as of June 30, 1940 were 405 aircraft and 19,922 persons. The personnel as of June 30, 1941 included 1,166 first pilots, 1,298 co-pilots, 203 dispatchers, 5,868 mechanics and riggers, 4,678 other hangar and field employees, 238 stewards, 842 hostesses, 8,404 office employees, and 1,222 in all other classifications.

The gasoline consumed in the first half of 1941 totalled 43,336,579 gallons as against 33,220,246 gallons in the first half of 1940. The average journey of each passenger was 393 miles as against 405 miles in 1940, and the average speed of transport airplanes was 156 miles per hour, an average increase of 5 m.p.h. over 1940.

SCHEDULED PASSENGER TRAFFIC

Approximately 4,360,000 passengers were carried by both the domestic as

well as the international and territorial air lines in 1941, an increase of 36.8 per cent over the total of 3,185,278 for 1940. Operations in September established all-time high records in passengers carried and revenue passenger miles flown. Passengers carried totalled 429,773, an increase of 49.51 per cent over September 1940, whereas revenue passenger miles jumped 36.83 per cent with a total of 147,572,534.

The average revenue passenger load factor (ratio of passengers to seats available) also rose to the unprecedented high of 68.11 per cent. The highest load factor for September was that of American Airlines with 78.87, followed by United Airlines and T.W.A. with 78.16 and 71.82, respectively.

The 429,773 passengers carried in September were distributed as follows: American 133,593, United 78,847, T.W.A. 50,809, Eastern 50,740. The sum of these four constitutes 73 per cent of all passengers carried by domestic operators that month.

Although the aircraft branch of the Office of Production Management in November made tentative allocations of 112 planes to commercial airlines in the United States in 1942, it is quite likely that this number may be radically reduced in view of our entry into war. By executive order on Dec. 13, 1941, all civil aviation facilities were put under the control of the War Department. It is expected that the airlines will be requested to furnish space for military missions of high priority. The degree of importance attached to the continued operations of the air carriers was evidenced by the high defense priority rating of A-3 assigned to deliveries of all materials of any nature which enter into the upkeep of planes and ground equipment.

MAIL CARRIAGE

Air mail poundage carried during 1941 amounted to approximately 45,000,000 pounds, a 34.2 per cent increase over the 1940 figure of 33,800,000. Air mail pound miles for the first nine months of 1941 totalled 14,824,148,338 against 11,259,030,789 for the same period in 1940, an increase of

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27.5 per cent. Mail revenue for the same period was \$16,095,308, distributed among 18 operators. American, United, T.W.A., Northwest and Eastern accounted for 69.8 per cent of the total mail revenue. All American Aviation pioneer operators of pick-up mail service continued operations with success. Mail pay rates for this service were established by the Civil Aeronautics Board at 40 cents per airplane mile. Increased interest was evidenced in this method of mail pick-up and delivery by the many new routes under consideration totalling approximately 40,000 miles.

The Air Mail Pick-up service on Dec. 23, 1941 completed its first 1,000,000 miles of flying since Aug. 12, 1940, when the Civil Aeronautics Board established it as a permanent part of the nation's air-line system. The service embraces five routes covering 112 cities and towns in Pennsylvania, West Virginia, Delaware, New York, Kentucky, and Ohio.

In attaining the first-million-mark, operators of the novel service by which mail and express are collected and delivered by airplane non-stop, announced that it had been accomplished without "serious mishap to personnel, equipment or cargo."

During this period, 94.6 per cent of all schedule flights were completed; 50,783 pick-ups and deliveries made, and 207,000 pounds of air mail transported. Air mail volume nearly doubled in the year. In January, 1941 the pick-up lines carried 9,404 pounds of mail. In October, the last month for which official figures were available, the volume reached 17,331 pounds.

Prior to its certification by the Civil Aeronautics Board as a regular air carrier, the Air Pick-up Service was operated by All American under the supervision of the Post Office Department for a year as an experiment. In this period, the service flew 438,145 miles and completed 91.6 per cent of schedules.

AIR EXPRESS

As usual the greatest strides in scheduled air transportation were made in air express. The 22,500,000 pounds carried in 1941 represented a 58.5 per cent increase over the 1940 total of 14,188,178 pounds. Express pound miles for the first nine months of the year increased 49.2 per cent over the same period in 1940. In September alone, 1,600,000 pounds were carried and express pound miles were

DOMESTIC AIR CARRIER OPERATIONS

	Sept. 1941	Sept. 1940	Per Cent Increase
Companies Reporting.....	17	19	....
Revenue Passengers.....	429,773	290,919	47.2
Pounds of Express.....	1,600,000	1,184,249	35.1
Express Pound Miles.....	1,025,556,323	647,046,578	58.5
Revenue Miles Flown.....	12,127,483	10,084,445	20.2
Passenger Miles Flown.....	147,572,534	108,088,317	36.8
Load Factor.....	68.11	62.03	9.8

First Nine Months—January—September

	1941	1940	Per Cent Increase
Companies Reporting.....	17	19	....
Revenue Passengers.....	2,792,002	2,055,475	35.9
Passenger Miles.....	1,018,308,740	777,716,304	30.8
Express Pounds.....	13,020,000,000	8,647,457	50.5
Express Pound Miles.....	7,188,267,452	4,806,700,000	49.2
Revenue Miles Flown.....	98,442,706	79,449,824	23.9
Passenger Load Factor.....	58.92	59.70	1.5
Airmail Pound Miles*.....	14,324,148,338	11,259,030,789	27.5

* For First Seven Months of Year.

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1,025,556,323. Express is carried only when space is available on the airliners. All ground handling and arrangements are performed by Railway Express Agency. Total revenue from this source (\$2,054,542) represented 2.9 per cent of the total of passenger, mail, and express revenue. R.E.A. coordinates the 23,000 towns off the airlines with more than 250 airline terminals. The average shipment weighs seven pounds. The average express revenue per ton mile was 56 cents for the first nine months of operation. Aircraft manufacturers utilized the services of air express to prevent minor breakdowns in production and generally to conserve valuable time.

FARES AND REVENUE

Total revenue of the airlines for the first nine months of the year was \$69,956,418. Passengers, mail, and express accounted for \$51,806,568 (74.1%), \$16,095,308 (23.0%), \$2,054,542 (2.9%), respectively. Average passenger fare per mile was \$.0504. Revenue per ton mile of mail and express were respectively \$1.67 and \$.56. Average operating expense per mile was \$.59.

THE SAFETY RECORD

According to figures released by the Civil Aeronautics Board, the domestic and international airlines operating under the American flag flew more than 150,000,000 passenger miles for every passenger fatality. This is equivalent to 50,000 individual passenger trips from coast to coast of the United States. The corresponding record for the first eight months of 1940 was 39,000,000 miles per passenger fatality, and that for the first eight months of 1939 was 27,000,000.

For no year prior to 1939 did the number of passenger-miles per passenger fatality for the first eight months of the year exceed 25,000,000. The passenger safety record for the first eight months of 1941 was, therefore, nearly four times as good as that for the corresponding period of any previous year.

At the end of August a total of more

than 60,000,000 airplane miles had been flown on the domestic airlines, with more than 700,000,000 passenger miles of transportation service rendered since the last accident involving the death of any passenger or any member of an airliner crew.

FEDERAL AIRWAYS SYSTEM

To serve the mounting volume of commercial and military traffic, the Federal Airways System was extended and improved. At the end of the year, there were in operation 32,487 miles of lighted airways, equipped with radio course signals (known as radio ranges), communications and weather-reporting facilities, and emergency landing fields.

Traffic along these routes was separated and otherwise controlled from 14 C.A.A. centers, which recorded 1,628,400 aircraft operations during the year, a gain of 45 per cent over 1940. New control centers at Memphis and Jacksonville were completed during 1941, with seven additional centers planned for 1942, at San Antonio, Tex.; Boston; Kansas City, Mo.; Denver, Col.; Albuquerque, N. M.; Minneapolis, Minn.; and Great Falls, Mont.

The growing volume of traffic occasioned a ruling during 1941 that all craft flying the airways above 3,500 feet must be equipped with two-way radio.

Another step to insure safe movement of aircraft during the emergency was the passage of legislation, authorizing the C.A.A. to establish or take over operation of control towers at airports where there is both civilian and military flying. This work is already under way.

To improve weather reporting service, an additional 24,000 miles of teletype lines were leased, bringing the total to 55,790 miles, in addition to the 10,360 miles used exclusively for traffic control.

Ultra-high-frequency radio ranges, which transmit with virtually no interference, were put into operation along the New York-Chicago airway as a service test system. Instrument landing systems operating in the U-H-F

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band were being installed at Washington and Atlanta, with five more being manufactured for use at New York, Cleveland, Chicago, Kansas City, and Los Angeles.

AIRPORTS

The C.A.A.'s first airport program got underway during the year with 385 defense landing areas designated for construction or improvement by a board consisting of the Secretaries of War, Navy, and Commerce. Funds of about \$140,000,000 were involved, with a Presidential request for an additional \$57,865,300 before Congress. At the end of 1941, the nation's airports numbered 2,453 compared with 2,331 in 1940. They were divided as follows: 1,082 municipal, 901 commercial, 31 private, 78 Army, 38 Navy, 40 miscellaneous government, 283 C.A.A. intermediate. Improvement of the airport picture is also noticeable in the fact that there are now 64 Class 4, or top-notch airports, against 23 in 1940, while the number of Class 1 airports, those with minimum facilities, has dropped from 1,641 to 1,501. Class 4 airports are suitable for operations of both heavy bombers and airline transports.

Meanwhile, however, the usual program of airport construction, which had been made possible by allotments from the Work Projects Administration and other Federal agencies as well as contributions from local sponsors, continued during 1941. As directed by the Civil Aeronautics Act, each such airport project, before approval by the W.P.A. authorities, was first certified by the Administrator, following study, recommendations, and approval from an aeronautical standpoint, as reasonably necessary in air commerce or for the national defense.

During the calendar year 1941, the Administrator issued 490 Certificates of Air Navigation Facility Necessity, authorizing the expenditure of approximately \$107,000,000 in Federal funds, including WPA, PWA, NYA, CCC, and War Department (Civil Projects). In addition, approximately \$23,000,000 in CAA funds and \$46,-

000,000 in sponsors' pledges were involved in these projects.

AIRCRAFT PRODUCTION

Although civil aircraft manufacture was being diverted to military channels at the end of the year, production for the first six months of 1941 reached 3,775 units, an increase of 65 per cent over the 2,289 civil aircraft produced in the corresponding six months of 1940, according to statistics compiled by the Civil Aeronautics Administration. Output of civil aircraft during the calendar year 1940 totaled 6,748 units. The production figures reflect added emphasis on the trend toward increased performance, especially in the light-plane category which became pronounced during the first six months of 1941.

Output of 1- and 2-place single-engine landplanes for the 1941 six-month period was 2,880 aircraft, an increase of 61 per cent over the 1,786 produced in the 1940 months. In the 3-5 place single-engine landplane class, the 1941 production was 757 units, up 91 per cent from the 396 produced in 1940, while 3-5 place multi-engine landplanes output rose from three in 1940 to seven in 1941. In the 6-17 place multi-engine category, production during the first half of the year was 21, a gain of 91 per cent over the 11 produced in the 1940 period. Production of airliner-type aircraft—18 place and over multi-engine planes—remained about the same, 65 produced in the six months of 1941 against 66 in the 1940 period.

There were only three single-engine seaplanes produced in the first half of 1941 against 10 in 1940, but multi-engine seaplane output rose from 0 in 1940 to 5 this year. Single-engine amphibian production was nothing in 1941 against one in 1940, but multi-engine amphibian output soared from nothing in 1940 to 18 in 1941.

The statistics show that a total of 3,640 single-engine aircraft was produced in the first six months of 1941, up 65 per cent from the 2,207 pro-

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duced in the comparable 1940 months. Multi-engine output for the two periods, respectively, was 116 and 82, an increase of 41 per cent, while output of aircraft in the unclassified category in 1941 reached 19 units against 14 in 1940, a gain of 36 per cent.

It must be pointed out that many aircraft included in these totals, both in the light plane and heavy multi-engine categories, never were placed in civil use but were routed into other channels.

During the first six months of 1940, the demand for increased engine horsepower in the light plane, used in the Civilian Pilot Training Program elementary course, was appreciable. This was even more striking in the first half of 1941. In the 1940 period, output of single-engine aircraft with power plants of 51-70 horsepower rose to 1,496 from 466 such aircraft in the first half of 1939. In the first six months of the year, production in the category reached 2,265 planes, an increase over 1940 of 51 per cent. However, in the 71-100 horsepower single-engine category, the percentage gain was even higher. The 1941 production was 1,113 aircraft, an increase of 284 per

cent over the 290 produced in 1940.

In the 100-225 horsepower category, which includes aircraft used in the C.P.T. secondary course, the production of single-engine aircraft in the 1941 period was 105, up 650 per cent from the 14 produced in 1940, while the multi-engine output rose 733 per cent from three in 1940 to 25 in 1941.

Output of multi-engine aircraft of 601 horsepower and over was 90 in 1941 against 72 in 1940, an increase of 25 per cent.

Grouped according to weight and engine classification, the statistics show that in the first half of 1941, 2,328 single-engine aircraft of not more than 1,300 pounds were produced, representing an increase of 65 per cent over the 1,411 produced in the like 1940 period. In the 1,301-4,000 single-engine category, the 1941 output was 1,290 units, a 74 per cent increase over the 740 produced in 1940.

Following are statistics showing domestic civil aircraft production for the first six months of 1941 compared with production in the first half of 1940. Table I shows production by types, Table II by engine horsepower, and Table III by weight and engine classification.

TABLE I—BY TYPES

	January 1941	June 1940	Per Cent of Increase or Decrease
Landplanes:			
1- 2 place:			
Single engine.....	2,880	1,786	+61
Multiengine.....	0	2	.....
3- 5 place:			
Single engine.....	757	396	+91
Multiengine.....	7	3	.....
6-17 place:			
Multiengine.....	21	11	+91
18- place and over:			
Multiengine.....	65	66	.....
Seaplanes:			
Single engine.....	3	10	.....
Multiengine.....	5	0	.....
Amphibians:			
Single engine.....	0	1	.....
Multiengine.....	18	0	.....
Total single engine.....	3,640	2,207	+65
Total multiengine.....	116	82	+41
Unclassified.....	19	14	+36
Total.....	3,775	2,289	+65

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TABLE II—BY ENGINE HORSEPOWER

	January 1941	June 1940	Per Cent of Increase or Decrease
50 horsepower and under:			
Single engine.....	10	256	-96
Multiengine.....	0	1	.....
51- 70 horsepower:			
Single engine.....	2,265	1,496	+51
71-100 horsepower:			
Single engine.....	1,113	290	+284
101-165 horsepower:			
Single engine.....	120	78	+54
166-225 horsepower:			
Single engine.....	105	14	+650
Multiengine.....	25	3	+733
226-300 horsepower:			
Single engine.....	9	21	-57
301-600 horsepower:			
Single engine.....	18	37	-51
Multiengine.....	1	6	.....
601 horsepower and over:			
Single engine.....	0	1	.....
Multiengine.....	90	72	+25
Total single engine.....	3,640	2,207	+65
Total multiengine.....	116	82	+41
Unclassified.....	19	14	+36
Total.....	3,775	2,289	+65

TABLE III—BY WEIGHT AND ENGINE CLASSIFICATION

	January 1941	June 1940	Per Cent of Increase or Decrease
Not more than 1,300 pounds:			
Single engine.....	2,328	1,411	+65
1,301- 4,000 pounds:			
Single engine.....	1,290	740	+74
4,001-10,000 pounds:			
Single engine.....	22	42	-48
Multiengine.....	26	10	+160
10,001-25,000 pounds:			
Multiengine.....	85	67	+27
26,000 pounds and over:			
Multiengine.....	5	5	.....
Unclassified.....	19	14	.....
Total.....	3,775	2,289	+65

PILOTS

The reservoir of certificated pilots rose to a new high level when the nation's roster passed the 100,000 mark at the close of the year. The total as of Oct. 1, 1941 was 91,442, compared with 82,277 on July 1. This includes 1,594 holding airline transport pilot certificates, 14,092 commercial, 345 limited commercial, and 75,411 private pilot certificates.

Totals in the corresponding categories as of July 1 were: 1,510 air-

line transport, 12,583 commercial, 421 limited commercial, and 67,763 private. The Oct. 2 total includes 3,253 women pilots divided as follows: 100 commercial, 13 limited commercial, and 3,050 private. Of the 154 certificated glider pilots, two were women.

California increased its lead in number of certificated pilots with a total of 10,840 in October, as against 9,965 in July. New York was second with 6,570 as against 5,765 in July, while Texas ran a close third, with

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6,077 in October and 5,493 at mid-year.

PILOT TRAINING

At the end of the year, the Army and the Navy were getting one third of their flying cadets from the ranks of C.A.A. trainees. In this manner, some 14,000 entered the flight branches of the Army and the Navy. In addition approximately 2,800 C.A.A. instructors went to defense units here or in Canada.

A new program for the training of 3,200 new instructors to insure the mass production of pilots got under way at the end of the year. During the year, 30,000 young men completed elementary courses with 9,800 still in training. Graduates of secondary courses in 1941 numbered 6,000 with 3,000 in training on Dec. 31. Approximately 6,000 completed instructor and refresher courses. All this was accomplished by 550 ground schools and 600 flight centers.

The value of this training program was evidenced by a change in War Department regulations permitting aviation cadets to receive credit for prior flight training. The Navy Department also adopted the same procedure. This change enabled the military branches to take advantage of the Civilian Pilot Training Program by allowing credits for previous flying experience. Plans were also under way to train ferry pilots for Lease-Lend ferry activities. Again C.A.A. taught civilian flyers graduating from the advanced cross-country course will be used. Instruction will be given by outstanding commercial aviation schools.

Preliminary plans indicated that Pan American Airways, which is operating the North African Service for the government, will furnish the final schooling in celestial navigation. Despite the increased training activities the safety record advanced to 16,194,000 miles flown per fatality during the three months ended Aug. 15. It compares with 8,252,000 miles for the previous three months and 4,500,000 miles per fatality in the whole program prior to Feb. 15, 1941. Credit

for this record is ascribed to the controlled instruction specified by C.A.A.

FLYING RESTRICTIONS

On Dec. 8, 1941 D. H. Connolly, Administrator of Civil Aeronautics, suspended all pilot certificates except those held by airline pilots. Pilots at schools, airplane factories, and those engaged in ferry activities were soon reinstated by endorsement of their certificates by the senior Army or Navy representative at each establishment. All others could be reinstated only after "satisfactory evidence of citizenship and loyalty accompanied by positive identification" was accepted by a designated representative of the C.A.A. On the previous day all aircraft not engaged in scheduled air transportation were grounded and police assigned to all known landing fields.

On Dec. 15 the Army Air Corps regulations governing aircraft operations went into effect. Active Air Defense Zones were established along the coastal frontier of the United States. On the east coast, this zone extended from the Canadian border to Savannah, Ga., and from the shore line extending 150 miles inland and 200 miles out to sea. A similar zone was established on the west coast extending from the Canadian border to the Mexican border. All flights except local flights within a 10-mile radius of the departure airport were to be made known to the Air Corps Information Centers.

No flight beyond the 10-mile radius was permitted unless military or naval operations required it or a flight plan had been filed with the appropriate military, naval, or civil operations office and formally released by the Interceptor Command. The flight plan included the number of aircraft in the flight, type of aircraft, point of departure, time of departure, route and altitude to be flown, destination and estimated time of arrival. In this manner the movement of all aircraft was put under the surveillance of the Interceptor Command.

After Jan. 8, 1942 all pilots were required to carry identification cards

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containing their fingerprints, picture, and signature. The carriage of baggage, cargo, and cameras in aircraft other than those on established air lines was also restricted. Baggage and cargo can only be carried if it has first been thoroughly searched by the pilot, and cameras must be made inaccessible to the passengers.

CIVIL AIR PATROL

The Civil Air Patrol, established by executive order on Dec. 1 under the Office of Civilian Defense, was in the process of national organization at the end of the year. Under the command of Major General John F. Curry, Air Corps, the principal object is the organization of the civilian aviation resources for national defense service. A training directive covering both flight and ground service was in preparation. Service in the C.A.P. is altogether voluntary, and the purpose is to utilize the time normally spent in casual flying. The C.A.P. regional commands were the same geographically as the War Department Corps Areas. Working in cooperation with state aero commissions and aviation bodies, many of the states were well organized and functioning along the lines indicated in the proposed directive. Courses in

navigation and first-aid were already under way.

DEFENSE PRODUCTION

Nearly 20,000 war planes were produced during 1941, and the engine production rate was 6,000,000 horsepower per month. Propeller production rate passed the 500,000 a year mark. Productive factory floor space increased from 25,000,000 to approximately 46,000,000 square feet. Employing approximately 5,000 workers on Jan. 1, 1940 and 125,000 a year later, the aircraft industry employment approached the 400,000 mark at the end of 1941. It is expected that this number will be doubled when the new production facilities in the midwest swing into action early in 1942. The conversion of the automobile industry to aircraft production will also serve to increase the size of the industry.

At the close of the year Boeing, Vega, and Douglas were all working together, along with their sub-contractors, in a concerted effort to reach the goal of 1,000 long-range bombers per month. United against a common foe, labor and management were working shoulder to shoulder to win the war of production.

PERIODICAL PUBLICATIONS

Aviation

330 West 42nd Street, New York City.

Bus Transportation

330 West 42nd Street, New York City.

Electrical Communication

67 Broad Street, New York City.

Electrical World

330 West 42nd Street, New York City.

Journal of the Aeronautical Sciences

30 Rockefeller Plaza, New York City.

Manufacturers News

120 South La Salle Street, Chicago.

Manufacturers Record

Baltimore, Md.

Marine Age

75 West Street, New York City.

Marine Engineering & Shipping Review

30 Church Street, New York City.

Marine Journal

5 Beekman Street, New York City.

Marine News

26 Water Street, New York City.

Marine Progress

95 Broad Street, New York City.

Mass Transportation

431 South Dearborn Street, Chicago.

National Aeronautic

Dupont Circle, Washington, D.C.

Popular Aviation

608 South Dearborn Street, Chicago.

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Protectionist

38 Chauncy Street, Boston.

Railway Age

30 Church Street, New York City.

S.A.E. (Journal of the Society of Automotive Engineers)

29 West 39th Street, New York City.

Shipping Digest

420 Lexington Ave., New York City.

Transit Journal

330 West 42nd Street, New York City.

COGNATE SOCIETIES AND RESEARCH INSTITUTIONS

(For further information, the reader may address the following organizations)

MANUFACTURERS

AMERICAN ASSN. OF CREAMERY BUTTER MANUFACTURERS, 110 N. Franklin St., Chicago, Ill.

AMERICAN AUTOMOBILE ASSN., Pennsylvania Ave. at 17th St., Washington, D.C.

AMERICAN BOTTLES OF CARBONATED BEVERAGES, 224 Southern Building, Washington, D.C.

AMERICAN BRUSH MANUFACTURERS ASSN., 505 Arch St., Phila., Pa.

AMERICAN HARDWARE MANUFACTURERS ASSN., 342 Madison Ave., New York City.

AMERICAN INSTITUTE OF STEEL CONSTRUCTION, INC., 101 Park Ave., New York City.

AMERICAN IRON AND STEEL INSTITUTE, 350 Fifth Ave., New York City.

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PART FIVE

SOCIAL AIMS AND CONDITIONS

DIVISION XIV

IMMIGRATION AND POPULATION

POPULATION STATISTICS

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POPULATION GROWTH

The population of continental United States on April 1, 1940 was 131,669,275, as compared with 122,775,046 in 1930. The increase in population between these two census dates thus amounted to 8,894,229. While this is a considerable number, it represents a gain of only 7.2 per cent, which is less than half the increase in the preceding decade, which was 16.1 per cent. There are two main reasons for this slowing down in the growth of the population of the United States, namely, the absence of any net immigration from foreign countries during the decade and the much lower birth rate.

The birth rate in the United States has been declining for several decades. The lowest point was reached in 1933, when there were recorded only 16.6 births per 1,000 of the population. Since that date there has been an appreciable increase in the recorded figure, but the general rate in 1940 was still only 17.9 per 1,000. In 1921 the birth rate for the 27 states then in the registration area was 24.2. From the point of view of the natural increase, that is, the excess of births over deaths, the effect of the decline in birth rate has been to some extent offset by a decline in the death rate, which was only 10.7 in 1940, as com-

pared with 11.5 in 1921 and 12.1 in 1923.

On the assumption that present trends will continue, it is estimated that the population of continental United States will be about 141,000,000 in 1950; 147,000,000 in 1960; 151,000,000 in 1970; and 153,000,000 in 1980; and that at some time during the decade following 1980, population growth will reach its maximum and perhaps begin a slow decline.

The most significant data on births and deaths which need to be considered in any study of probable future trends in population are presented in the table next page, which gives for each year from 1920 to 1940 the number of births and deaths reported from the registration states (which, since 1933, have included all the states), the annual rates per 1,000 of the population, and a three-year moving average of these rates. Estimated totals for the United States are also given for the years from 1920 to 1933; and in the final column, the excess of births over deaths, or the actual amount of the reported natural increase in the population.

RACE AND NATIVITY

Final returns from the 1940 Census of Population showed little change in the racial composition of the United

POPULATION STATISTICS

BIRTHS AND DEATHS IN THE REGISTRATION STATES

(The birth registration states included 59.7 per cent of the total population of the country in 1920 and the death registration states 80.9 per cent; in 1933 both areas had been extended to include the entire country.)

Year	Births Registered			Deaths Registered			United States Totals Partly Estimated for Years Prior to 1933 (thousands)		
	Number of Births	Rate per 1,000 Population		Number of Deaths	Rate per 1,000 Population		Births	Deaths	Excess of Births Over Deaths
		Annual	3-Year Moving Average		Annual	3-Year Moving Average			
1940.....	2,360,399	17.9	...	1,417,269	10.7	...	2,360	1,417	943
1939.....	2,265,588	17.3	17.6	1,387,897	10.6	10.7	2,266	1,388	878
1938.....	2,286,962	17.6	17.3	1,381,391	10.6	10.8	2,287	1,381	906
1937.....	2,203,337	17.1	17.2	1,450,427	11.3	11.2	2,203	1,450	753
1936.....	2,144,790	16.7	16.9	1,479,228	11.6	11.3	2,145	1,479	666
1935.....	2,155,105	16.9	16.9	1,392,752	10.9	11.2	2,155	1,393	762
1934.....	2,167,636	17.2	16.9	1,396,903	11.1	10.9	2,168	1,397	771
1933.....	2,081,232	16.6	17.1	1,342,106	10.7	10.9	2,081	1,342	739
1932.....	2,074,042	17.4	17.3	1,293,269	10.9	10.9	2,178	1,358	820
1931.....	2,112,760	18.0	18.1	1,307,273	11.1	11.1	2,231	1,372	859
1930.....	2,203,958	18.9	18.6	1,327,240	11.3	11.4	2,327	1,393	934
1929.....	2,169,920	18.8	19.1	1,369,757	11.9	11.7	2,291	1,446	845
1928.....	2,233,149	19.7	19.7	1,361,987	12.0	11.7	2,368	1,444	924
1927.....	2,137,836	20.5	20.2	1,211,627	11.3	11.8	2,439	1,347	1,092
1926.....	1,856,068	20.5	20.8	1,257,256	12.1	11.7	2,410	1,422	988
1925.....	1,878,880	21.3	21.3	1,191,809	11.7	11.8	2,465	1,353	1,112
1924.....	1,930,614	22.2	21.9	1,151,076	11.6	11.8	2,532	1,323	1,209
1923.....	1,792,646	22.1	22.2	1,174,065	12.1	11.8	2,475	1,358	1,117
1922.....	1,774,911	22.3	22.9	1,083,952	11.7	11.8	2,455	1,287	1,168
1921.....	1,714,261	24.2	23.4	1,009,673	11.5	12.1	2,628	1,248	1,380
1920.....	1,508,874	23.7	...	1,118,070	13.0	...	2,526	1,383	1,143

States since 1930. In 1940, 89.8 per cent of the population were white, 9.8 were Negro, and the remaining 0.4 per cent were members of other non-white races. The proportions in 1930 were 89.8 for the whites, 9.7 for the Negroes, and 0.5 for other races. The whites increased 7.2 per cent (the same rate of growth as for the total population), the Negroes increased 8.2 per cent, and the other races collectively showed a decrease of 1.4 per cent.

The most noteworthy change in the nativity composition was the decrease of 18.3 per cent in the foreign-born white population. This group, which had been fairly constant in number at the censuses of 1930 and 1920, decreased from 13,983,405 in 1930 to 11,419,138 in 1940. The decrease of the foreign-born whites is due to the re-

striction of foreign immigration and to their high rate of mortality, which in turn is due to the large proportions in the older age groups. Indeed, in 20 or 30 years the foreign-born whites will form only a numerically negligible part of our population unless the immigration laws are revised. Under present conditions there is little likelihood that this will occur in the near future.

Among the non-white races other than the Negro, the American Indians, Chinese, and Filipinos were the only ones to increase their numbers. The Japanese population decreased from 138,834 to 126,947, a loss of 8.6 per cent in the ten years.

Marked differences are observable in the geographical distribution of the various racial and nativity elements. The North has a much larger propor-

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tion of the foreign-born whites than it has of the total population; in the South this group constitutes almost a negligible fraction of the population. The South still has well over two-thirds of the Negro population, though a large northward and westward migration of Negroes has occurred since 1930. The other races, principally American Indians and

Asiatics, are concentrated in the Mountain and Pacific States.

The 1940 data on race, with nativity for the white, are summarized in the table below, with 1930 data for comparison. (1930 figures for Mexicans have been combined with those for the white population, since Mexicans are no longer shown as a separate class.)

POPULATION BY COLOR OR RACE

Race and Nativity	1940	1930	Per Cent of Increase or Decrease
All classes	131,669,275	122,775,046	7.2
White	118,214,870	110,286,740	7.2
Native	106,795,732	96,303,335	10.9
Foreign born	11,419,138	13,983,405	-18.3
Negro	12,865,518	11,891,143	8.2
Other races	588,887	597,163	-1.4
Indian	333,969	332,397	0.5
Chinese	77,504	74,954	3.4
Japanese	126,947	138,834	-8.6
Filipino	45,563	45,208	0.8
Hindu	2,405	3,130	-23.2
Korean	1,711	1,860	-8.0
All other	788	780	1.0

URBAN-RURAL DISTRIBUTION

The rates of increase in the urban and rural population of the United States were more nearly equal between 1930 and 1940 than at any time since the decade from 1810 to 1820. The urban population increased only 7.9 per cent between 1930 and 1940, and the rural population increased by 6.4 per cent. (The Census Bureau defines urban population as that resident in incorporated places—cities, towns, boroughs, etc.—of 2,500 inhabitants or more, the remainder of the population being considered rural.) When it is recalled that between 1920 and 1930 the urban population increased 27.3 per cent while the rural population increased only 4.4 per cent, the radical change in relationship at once becomes evident.

The urban increase between 1930 and 1940 amounted to 5,468,879 persons, but about 1,000,000 of these were added by reclassification of areas, that is, by the net addition to the urban

area of places which passed the 2,500 mark sometime between 1930 and 1940. According to estimates based on available census data, the urban centers gained about 1,535,000 inhabitants through net in-migration from rural areas, and about 3,934,000 by the excess of births over deaths. There was no gain from foreign immigration. The cities shared the population increase unequally, those in the size group under 100,000 gaining proportionately more than those over 100,000.

The Census Bureau has set up metropolitan districts in connection with all cities of 50,000 inhabitants or more, two or more such cities sometimes being in one district. The metropolitan district includes not only the city proper, but all adjacent and contiguous minor civil divisions with a population of 150 or more per square mile. In 1940 there were 140 metropolitan districts, with a combined population of 62,965,773, or al-

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most half of the total number of persons in the United States. Comparative figures for 1930, which are available for 133 districts, show that the population of these districts as a whole increased by 9.3 per cent, but that in all but a few the population outside the city limits increased relatively faster than the population within the boundaries. The central cities as a group increased by 5 per cent, whereas the metropolitan territory outside the cities increased by 15.8 per cent.

The rural-farm population, comprising all persons resident on farms in rural areas without regard to occupation, remained practically stationary from 1930 to 1940. The rural non-farm population, however—persons living outside urban areas as defined by the Census Bureau, but not on farms—increased 14.2 per cent. Part of this increase was doubtless due to

the expansion of the population of metropolitan districts into rural non-farm areas adjacent to cities, and part was the result of migration from farms to the smaller incorporated places. Since the rural farm population has a higher fertility rate than either the rural non-farm or urban population, its failure to increase was probably caused by out-migration.

The urban-rural distribution of the total population and of the main color-nativity classes is shown in the following table for 1940 and 1930. The native white population increased most rapidly in the rural non-farm area and least rapidly in the rural farm; the Negro population increased 20.4 per cent in the urban areas and decreased 3.8 per cent in the rural farm; and the foreign-born white population shows very considerable decreases in all three areas.

URBAN AND RURAL POPULATION BY COLOR AND NATIVITY

Color, Nativity, and Area	1940	1930	Per Cent of Increase or Decrease
All classes.....	131,669,275	122,775,046	7.2
Urban.....	74,423,702	68,954,823	7.9
Rural—Nonfarm.....	27,029,385	23,662,710	14.2
Rural—Farm.....	30,216,188	30,157,513	0.2
Native White.....	106,795,732	96,303,335	10.9
Urban.....	58,838,505	52,483,042	12.1
Rural—Nonfarm.....	23,407,379	19,793,724	18.3
Rural—Farm.....	24,549,848	24,026,569	2.2
Foreign-born White.....	11,419,138	13,983,405	—18.3
Urban.....	9,134,318	11,076,991	—17.5
Rural—Nonfarm.....	1,371,206	1,706,738	—19.7
Rural—Farm.....	913,614	1,199,676	—23.8
Negro.....	12,865,518	11,891,143	8.2
Urban.....	6,253,588	5,193,913	20.4
Rural—Nonfarm.....	2,109,630	2,016,707	4.6
Rural—Farm.....	4,502,300	4,680,523	—3.8
Other Races.....	588,887	597,163	—1.4
Urban.....	197,291	200,877	—1.8
Rural—Nonfarm.....	141,170	145,541	—3.0
Rural—Farm.....	250,426	250,745	—0.1

AGE DISTRIBUTION

The average age of the population continued to increase between 1930 and 1940, as it has for more than a century. In 1940 the median age of the United States population was 29 years, as compared with 26.4 years in

1930. A concomitant phenomenon was the increase in the number of persons 65 years of age or over, an increase of 35 per cent during the decade, as compared with a 7.2 per cent increase in the total population. There was a corresponding decrease

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in the number of persons under 20, who formed 34.4 per cent of the total population in 1940 as compared with 38.8 in 1930. These alterations in the age composition reflect the declining birth rate (which resulted in an absolute decrease of around 2,300,000 during the decade in the number of persons under 20), and improved mortality conditions, which enable more persons than ever before to survive to the higher ages. If present trends continue, the median age may be expected to rise still further, and the

number and proportion of elderly persons will increase as the number and proportion of young persons decrease.

The age data show that the United States would have a potential military strength of about 28,000,000 if all men between the ages of 18 and 44 were placed in the armed forces. This, of course, does not allow for those incapacitated for military service by physical unfitness, nor for those in occupations of such a nature that they would be more valuable to the war effort in civilian life.

AGE DISTRIBUTION OF POPULATION

Age (Years)	1940	1930	Per Cent Distribution	
			1940	1930
All ages.....	131,669,275	122,775,046	100.0	100.0
Under 5.....	10,541,524	11,444,390	8.0	9.3
5 to 9.....	10,684,622	12,607,609	8.1	10.3
10 to 14.....	11,745,935	12,004,877	8.9	9.8
15 to 19.....	12,333,523	11,552,115	9.4	9.4
20 to 24.....	11,587,835	10,870,378	8.8	8.9
25 to 29.....	11,096,638	9,833,608	8.4	8.0
30 to 34.....	10,242,388	9,120,421	7.8	7.4
35 to 39.....	9,545,377	9,208,645	7.2	7.5
40 to 44.....	8,787,843	7,990,195	6.7	6.5
45 to 49.....	8,255,225	7,042,279	6.3	5.7
50 to 54.....	7,256,846	5,975,804	5.5	4.9
55 to 59.....	5,843,865	4,645,677	4.4	3.8
60 to 64.....	4,728,340	3,751,221	3.6	3.1
65 to 69.....	3,806,657	2,770,605	2.9	2.3
70 to 74.....	2,569,532	1,950,004	2.0	1.6
75 and over.....	2,643,125	1,913,196	2.0	1.6
Not reported.....	.....	94,022	...	0.1
Under 1.....	2,020,174	2,190,791	1.5	1.8
5.....	2,142,407	2,505,250	1.6	2.0
14.....	2,405,730	2,382,385	1.8	1.9
15.....	2,422,519	2,295,699	1.8	1.9
16 and 17.....	4,892,170	4,663,137	3.7	3.8
21 and over.....	83,996,629	72,943,624	63.8	59.4

COUNTRY OF BIRTH OF THE FOREIGN BORN

The decrease in the foreign-born white population has already been noted. The 1940 Census figures show that the number of natives of almost every foreign country decreased, and the apparent exceptions are probably due rather to boundary changes and the disappearance of countries during the current war than to any actual increase in the number of foreign-born from these countries. The disappearance of Czecho-Slovakia, for example, may have induced many persons born there, especially those

of Germanic ancestry, to return Germany or Austria as their country of birth. Natives of four countries—Germany, Italy, Russia, and Canada—numbered more than 1,000,000 in 1940; in 1930 there were five countries which had contributed more than 1,000,000 to the population, Poland having dropped out of this category between 1930 and 1940. The 1940 census showed a decrease in the proportion of foreign-born whites native to northwestern Europe, and an increase in the proportion of those native to eastern, central, and southern Europe. The bulk of the immigrants

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from northwestern Europe arrived in this country earlier than those from other regions of that continent; their average age, therefore, is higher, and mortality has exacted a greater toll from them than from the other groups.

The foreign-born white population is shown by country of birth, for 1940 and 1930, in the accompanying table. Persons born in central Europe were asked to report the country in which their birthplace was located in 1937, prior to the boundary changes referred to above, so that the 1940 data

might be comparable with those for 1930.

CITIZENSHIP OF THE FOREIGN-BORN WHITE

On April 1, 1940, 7,250,252 foreign-born white persons, or 63.5 per cent of the total of 11,419,138, were naturalized citizens of the United States, and 3,343,814 were definitely returned as aliens. No report was received on the citizenship status of another 825,072, but in all probability the majority of these were aliens. The proportion of the foreign-born whites who were naturalized increased materially between 1930 and 1940, only 56.5 per cent having been naturalized in 1930. This increase may have resulted primarily, however, from increased length of residence in this country rather than from any basic change of attitude on the part of the foreign born.

SCHOOL ATTAINMENT

Public education has almost abolished illiteracy in this country, and in 1940 the census question regarding ability to read or write was replaced by one on the highest grade of school completed. Tabulations of the answers to the latter question have been prepared for the population 25 years of age or over, and future tabulations will show the school achievement of those under 25.

More than half the population aged 25 years or over had completed eight years of school by April 1, 1940, as shown in the table next page. The median number of grades completed was 8.4 for the total population, 8.3 for males, and 8.5 for females. Native whites, in general, had had more schooling than foreign-born whites, the median for the former class being 8.8 and for the latter 7.3. For Negroes the median number of years of school completed was 5.7, and for the other non-white races combined, 6.8 years.

The percentage of persons who had completed no school years was 3.7 for the total population, and ranged from 1.3 for the native white to 18.8 for non-whites other than Negroes. Ten

COUNTRY OF BIRTH OF THE FOREIGN-BORN WHITE

Country of Birth	1940	1930
All Countries...	11,419,138	13,983,405
England.....	621,975	808,684
Scotland.....	279,321	354,323
Wales.....	35,360	60,205
Northern Ireland....	106,416	178,832
Irish Free State (Eire).....	572,031	744,810
Norway.....	262,088	347,852
Sweden.....	445,070	595,250
Denmark.....	138,175	179,474
Netherlands.....	111,064	133,133
Belgium.....	53,958	64,194
Luxembourg.....	6,886	9,048
Switzerland.....	88,293	113,010
France.....	102,930	135,265
Germany.....	1,237,772	1,608,814
Poland.....	993,479	1,268,583
Czecho-Slovakia....	319,971	491,638
Austria.....	479,906	370,914
Hungary.....	290,228	274,450
Yugoslavia.....	161,093	211,416
Russia (U. S. S. R.)..	1,040,884	1,153,624
Lithuania.....	165,771	193,606
Latvia.....	18,636	20,673
Finland.....	117,210	142,478
Rumania.....	115,931	146,393
Bulgaria.....	8,888	9,399
Turkey in Europe...	4,412	2,257
Greece.....	163,250	174,526
Italy.....	1,623,580	1,790,424
Spain.....	47,707	59,033
Portugal.....	62,347	69,993
Other Europe.....	26,101	31,379
Palestine and Syria..	57,906	63,362
Turkey in Asia.....	52,479	46,651
Other Asia.....	39,524	47,567
Canada—French....	273,366	370,852
Canada—Other.....	770,753	907,660
Newfoundland.....	21,361	23,971
Mexico.....	377,433	639,017
Cuba and other West Indies.....	30,534	31,600
Central and South America.....	36,408	38,124
Australia.....	10,998	12,720
Azores.....	25,751	35,432
All other and not re- ported.....	21,892	22,769

XIV. IMMIGRATION AND POPULATION

YEARS OF SCHOOL COMPLETED BY PERSONS 25 YEARS OLD AND OVER, BY COLOR AND NATIVITY: 1940

Years of School Completed	All Classes		Native White		Foreign-born White		Negro		Other Races	
	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent
Persons 25 years old and over.....	74,775,836	100.0	57,038,335	100.0	10,961,188	100.0	6,491,333	100.0	284,980	100.0
No school years completed.....	2,799,923	3.7	764,384	1.3	1,335,611	12.2	646,225	10.0	53,703	18.8
Grade School: 1 to 4 years.....	7,304,689	9.8	3,457,673	6.1	1,764,446	16.1	2,033,931	31.3	48,639	17.1
5 and 6 years.....	8,515,111	11.4	5,513,101	9.7	1,568,134	14.3	1,393,039	21.5	39,837	14.0
7 and 8 years.....	25,897,953	34.6	20,558,596	36.0	3,988,297	36.4	1,286,639	19.8	64,421	22.6
High School: 1 to 3 years.....	11,181,995	15.0	9,842,214	17.3	761,378	6.9	549,661	8.5	28,742	10.1
4 years.....	10,551,681	14.1	9,447,826	16.6	807,507	7.4	268,481	4.1	27,867	9.8
College: 1 to 3 years.....	4,075,183	5.4	3,737,470	6.6	211,211	1.9	118,280	1.8	8,222	2.9
4 years or more.....	3,407,331	4.6	3,067,783	5.4	252,002	2.3	80,842	1.2	6,704	2.4
Not reported.....	1,041,970	1.4	649,288	1.1	271,602	2.5	114,235	1.8	6,845	2.4
Median school years completed.....	8.4	8.8	7.3	5.7	6.8
Per cent less than 5 years completed.....	13.5	7.4	28.3	41.3	35.9

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per cent of the total population had had at least one year of college, and 4.6 per cent reported four or more years. Native whites were the highest in this respect, 12 per cent having had some college training and 5.4 per cent four or more years.

MAJOR OCCUPATION CLASSES

The 1940 Census of Population classified the labor force into three main classes, namely, those persons employed in private industry or in regular government work during the week of March 24 to 30, 1940, those on public emergency work, and those seeking work. The census figures show that the entire labor force during this week comprised 52,789,499 persons, or about two persons out of every five in the United States.

Private industry and regular (non-emergency) government work employed 34,027,905 males, or 85.2 per cent of all those in the labor force, and 11,138,178 females, or 86.7 per cent of the total female labor force. There were 2,072,094 males and 457,512 females engaged in public emergency work, and 3,844,241 males and 1,249,569 females totally unemployed and seeking work. Of these, 462,360 males and 304,981 females were new

workers who had not previously had one month or more of full-time paid work experience.

Data on occupation classes were tabulated only for persons employed in private industry or regular government work, and these are shown in the accompanying table. Operatives and kindred workers formed a larger percentage of the total employed males in 1940 than any other group, constituting 18.2 per cent of the total. The next largest group was farmers and farm managers (14.7 per cent), followed by craftsmen, foremen, and kindred workers (14.5 per cent), and clerical and sales workers (12.8 per cent). The occupations returned by the largest percentage of the employed women were, as might be expected, radically different. More than one-fourth (28.3 per cent) were in clerical and sales work; 18.4 per cent were operatives, and nearly as large a proportion (17.7 per cent) were domestic workers. Of all employed women, 12.3 per cent were professional workers, as compared with only 4.4 per cent of the men. Laborers (excluding farm workers) formed 8.7 per cent of all the employed men, as compared with 0.9 per cent of the employed women.

EMPLOYED WORKERS BY MAJOR OCCUPATION GROUP: 1940

Occupation Group	Both Sexes	Male		Female	
		Number	Per Cent	Number	Per Cent
Employed (except on public emergency work).....	45,166,083	34,027,905	100.0	11,138,178	100.0
Professional workers.....	2,881,692	1,511,118	4.4	1,370,474	12.3
Semiprofessional workers.....	463,456	364,269	1.1	99,187	0.9
Farmers and farm managers.....	5,143,614	4,991,715	14.7	151,899	1.4
Proprietors, managers, and officials, except farm.....	3,749,287	3,325,767	9.8	423,520	3.8
Clerical, sales, and kindred workers.....	7,517,630	4,360,648	12.8	3,156,982	28.3
Craftsmen, foremen, and kindred workers.....	5,055,722	4,949,132	14.5	106,590	1.0
Operatives and kindred workers.....	8,252,277	6,205,898	18.2	2,046,379	18.4
Domestic service workers.....	2,111,314	142,231	0.4	1,969,083	17.7
Service workers, except domestic.....	3,458,334	2,196,695	6.5	1,261,639	11.3
Farm laborers (wage workers) and farm foremen.....	1,924,890	1,828,164	5.4	96,726	0.9
Farm laborers, unpaid family workers.....	1,165,120	941,841	2.8	223,279	2.0
Laborers, except farm.....	3,064,128	2,965,693	8.7	98,435	0.9
Occupation not reported.....	378,719	244,734	0.7	133,985	1.2

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1940 CENSUS REPORTS

The 1940 count of the population is now (February, 1942) available in the form of a series of state bulletins, with a summary for the United States, which are being bound together to form Volume I of the Sixteenth Census Reports on Population. Statistics of the population classified according to various characteristics, such as color, sex, and age, employment status, and major occupation group,

are being presented in a second series of bulletins, one for each state, and a summary bulletin for the United States, almost all of which are already available. Still other series give selected items from the Census of Housing for areas as small as city blocks; more extensive housing data for counties, cities, and townships; and selected population and housing data for census tracts in 61 cities.

RACE CONDITIONS IN THE UNITED STATES

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MINORITY GROUPS IN THE UNITED STATES

The entrance of the United States into the World War in 1941 heightened our interest in the number, distribution, and status of nativity and racial groups in this country. Primarily, our minority groups consist of foreign-born whites, Negroes, Indians, Japanese, Chinese, and, to a much less extent, groups such as the Filipinos and Hindus. Mexicans constitute an additional distinct group, but the 1940 Census reverted to the earlier policy of grouping them with whites except in cases where non-white extraction was obvious.

NON-WHITES

Although 1940 Census data regarding minority groups have not been released in detailed form at the time of this report, some information is available concerning the foreign-born whites, and preliminary estimates, based upon tabulations of a five per cent cross-section of the population, reveal, in general, the number and distribution of the non-white group. These two broad categories include practically all the minority groups in the country. (Population Series P-5, U. S. Bureau of Census.)

According to preliminary releases from the Census Bureau, the non-white population of the United States in 1940 numbered 13,455,988, or 10.2 per cent of the total population of 131,669,275. Since these are mainly Negroes, they are concentrated heavily in the South. Nearly three-fourths of the entire non-white group reside in that region. Moreover, they form over one-fourth of the total population within the South Atlantic and East South Central divisions and nearly one-fifth of the population of the West South Central states.

NEGROES

Although the majority of Negroes still live in the South, it would appear that during the past ten years they have continued the migratory trends of the preceding decade and have flocked to industrial centers of the North. This is apparent when rates of increase by region and color are considered. As a basis for comparison, it may first be noted that the rate of increase for the entire population of the United States during the 1930-1940 decade was 7.2 per cent; that for the total white population was also 7.2 per cent; and that for the total non-white was 7.7 per cent.

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In the South Atlantic states the white population from 1930 to 1940 increased 15.3 per cent, whereas the rate for the non-whites was only 6.5. In the East South Central section the rate was 10.6 for the whites and 4.7 for the non-whites. Quite the opposite situation was found in certain Northern states, and particularly in New York where non-whites increased 38.1 per cent during this period, while whites increased only 6 per cent. Other states showing rates of increase noticeably higher for non-whites than for whites were Illinois, Michigan, and Arizona; the rates for non-whites and for whites were respectively: 17.3 and 2.9 in Illinois, 20.8 and 8.1 in Michigan, and 26.3 and 12.9 in Arizona.

This picture of a steady flow of Negroes to urban centers is also apparent from the preliminary data for our largest cities. Among the 14 cities with 500,000 population or over in 1940, eight have witnessed an actual decrease in the number of white inhabitants during the past decade. On the other hand, none of these cities revealed a decrease among the non-whites. In all except one, non-whites increased by more than 10 per cent. In New York City, for example, the total non-white population increased from 341,069 in 1930 to 478,346 in 1940, a gain of 40.2 per cent, whereas the white population grew only at the rate of 5.9 per cent. The result of these trends has been, of course, an increase in the proportion that non-whites form of the total population of these cities. According to preliminary estimates, every one of these 14 large

est urban centers revealed a higher proportion of non-whites among the total residents in 1940 than in 1930. (See "Negro Education," p. 1000.)

FOREIGN-BORN WHITES

Census data in regard to the number of foreign-born white persons in the United States in 1940, classified by country of birth, are not yet available for all nationalities. Information is at hand, however, concerning the total number of foreign-born whites and their distribution throughout the nation. (Population Series P-9, U. S. Bureau of Census.) The most outstanding feature of the 1940 picture is the decreasing importance of this group in our general population. By definition, it is replenished only by immigration. Therefore, the drastic restrictions on immigration that were imposed during the 'twenties have resulted in consistent declines both in absolute numbers and relative proportions of foreign whites. In 1940 there were 11,419,138 foreign-born whites in the United States, but in 1930 there were 13,983,405; thus there has been a decline of 18.3 per cent during the past ten years. At the present time they form 8.7 per cent of the total population, as contrasted with 11.4 per cent in 1930.

As is evident from the accompanying table, the great majority of foreign-born whites resided in the North at the time of the 1940 Census. In contrast to the 8.7 per cent which they formed of the total population, they constituted 12.3 per cent of the population in the North, 10.3 per cent in

PERCENTAGE REGIONAL DISTRIBUTION OF FOREIGN-BORN WHITE POPULATION AND ALL JAPANESE, IN UNITED STATES: 1940*

Region	Total Population	Total Foreign-Born Population	Born in Germany	Born in Italy	Japanese	
					Total	Born in Japan
United States...	100.0	100.0	100.0	100.0	100.0	100.0
The North.....	57.8	82.1	84.9	88.1	3.9	6.1
The South.....	31.6	5.5	5.5	3.7	0.8	0.9
The West.....	10.5	12.5	9.6	8.2	95.3	93.0

* Computed from data obtained in U. S. Bureau of the Census: Releases on Population, Series P-3, No. 23, Dec. 9, 1941; Series P-9, No. 2, Dec. 12, 1941; and Series P-9, No. 3, Dec. 13, 1941.

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the West, but only 1.5 per cent in the South.

There were, in 1940, eight states with a foreign-born white population of 500,000 or over, and in those eight states resided nearly three-fourths of the nation's total foreign-born white group. New York State alone had 2,853,530, or 25 per cent of the foreign-born whites in the entire country, although that state had only 10.2 per cent of the nation's inhabitants. New York not only stood highest with respect to number of foreign-born whites; it outranked all other states with respect to proportionate importance of this group within the state. In New York, foreign whites formed 21.2 per cent of the state's population. Other states with high proportions were Massachusetts, Rhode Island, and Connecticut, each with 19 or 20 per cent of the population falling in this group, and New Jersey with 17 per cent. Farther west, the foreign-born whites were only 12 and 13 per cent of the total residents in the industrial states of Illinois and Michigan, and they formed a similar proportion of those living in California. In the remaining states, the foreign-born whites were less numerous, particularly in the South.

Although foreign-born whites still make up a considerable proportion of the total population in a few states, their relative importance declined during the 1930-1940 decade in every state in which they were at all prominent. They are fast losing prominence in our national demographic picture, and by virtue of the aging of the female contingents they are even ceasing to contribute substantial crops of "second generation" groups.

GERMANS, ITALIANS, AND JAPANESE IN THE UNITED STATES

Since the outbreak of war between the United States and Germany, Italy, and Japan, information concerning immigrants from those countries assumes unusual interest. Fortunately, the Bureau of the Census has recently released data concerning foreign-born Germans and Italians, and all Japa-

nese in the country. (Population Series P-3, P-9, U. S. Bureau of Census.)

At the time of the 1940 Census, there were in the United States 1,237,772 white persons born in Germany and 1,623,579 born in Italy (national boundaries as of Jan. 1, 1937). Of course, not all of these are aliens, since many of them have become citizens of the United States. Information is not yet available from the Census concerning the number of these foreign-born Germans and Italians who have been naturalized. However, the Department of Justice has issued provisional data regarding aliens who registered in 1940 under requirements of the Alien Registration Act. These figures indicated 695,363 alien Italians and 314,715 alien Germans in the United States.

According to the recent Census enumeration, there were 126,947 Japanese in continental United States, with an additional 158,501 in territories and possessions, excluding the Philippines.* The majority of the latter, namely 157,905, were in Hawaii. Of the Japanese in continental United States, 47,305 or 37.3 per cent had been born in Japan and hence were not eligible for citizenship; the remaining 79,642 were citizens by virtue of birth in this country or its territories and possessions.

With respect to trends, the total number of Japanese in the United States decreased by 8.6 per cent from 1930 to 1940, while the number of alien Japanese decreased by 32.9 per cent. The number of Japanese born in the United States increased from 68,357 in 1930 to 79,642 in 1940, or by 16.5 per cent. During the same ten-year period the number of foreign-born Germans decreased by 23.1 per cent, while the foreign-born Italians declined by 9.3 per cent.

As indicated in the preceding table, the foreign-born Germans and Italians are concentrated in the North and the Japanese are predominantly located

* At the time of the last Census taken in the Philippines, Jan. 1, 1939, there were 29,057 alien Japanese on those Islands. See: U. S. Bureau of the Census, Population, Series P-3, No. 23, Dec. 9, 1941.

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in the West. Actually, concentration of these groups in specific sections of the country is even more striking than the table indicates. Over a quarter of all foreign-born Germans (316,844) were located in New York State, and 36.7 per cent (454,867) were found in the two states of New York and Illinois. Ten states (New York, Illinois, Wisconsin, New Jersey, Pennsylvania, California, Ohio, Michigan, Minnesota, and Iowa in order of numbers of foreign-born Germans) contained nearly 80 per cent of this entire group. Among the foreign-born Italians, 584,075, or 36 per cent, were concentrated in New York State, with 58.5 per cent in the three states of New York, Pennsylvania, and New Jersey. Ten states (New York, Pennsylvania, New Jersey, Massachusetts, California, Illinois, Connecticut, Ohio, Michigan, and Rhode Island) contained over 91 per cent of this group.

As with other foreign-born white nationalities, a large proportion of immigrants from Germany and Italy have settled in our leading industrial centers. When the 1940 Census was taken, New York City alone had 224,749 inhabitants from Germany and 409,489 from Italy, while Chicago had 83,424 of the former and 66,472 of the latter.

Except for the few in New York State, practically all Japanese in the nation are to be found in the West, particularly along the Pacific Coast. In 1940 California alone had nearly three-fourths of all the Japanese in the country, and the three states of California, Washington, and Oregon contained 88.5 per cent of the total 126,947. In California, there were 93,717 Japanese, or 73.8 per cent of the entire group; in Washington, 14,565; and in Oregon, 4,071. Three states—Colorado, New York, Utah—had between 2,000 and 3,000, and Idaho had 1,191. All other states had less than 1,000 Japanese residents. Among the alien Japanese, 71 per cent of the total 47,305 were found in California and another 5,683 in Washington State. New York ranked third in number of alien Japanese with 1,772, and Oregon had 1,617. In all other

states the number was less than 1,000.

In spite of this concentration of natives of enemy countries in certain states and cities, their proportion in the total population of these areas is quite small. In New York State, with its large numbers of Germans and Italians, these two nationalities formed only 6.7 per cent of the total population, and in California, all Japanese formed only 1.4 per cent of that state's inhabitants. It should be emphasized that among these Germans and Italians are many naturalized citizens and among the Japanese are many citizens by virtue of birth in the United States. Moreover, the recent formation of organizations among Germans, Italians, and Japanese in this country for the support of our war and defense efforts, and the self-sacrificing activities of many individuals of these nationalities, testify to the loyalty of the great majority of these three groups.

IMMIGRATION

Admissions.—From the demographic viewpoint, the problem of immigration has been relatively unimportant since the enactment of laws severely restricting the number of aliens admitted annually. In the fiscal year ended June 30, 1941, there were 51,776 immigrant aliens admitted to the United States. This was a decline from the 70,756 who entered in 1940 and the 82,998 in 1939, the peak for recent years (Dept. of Justice Preliminary Report). The net immigration for 1941 was only 34,661, since there were 17,115 departures of aliens who had previously been admitted for permanent residence in this country. The number of departures was unusually low, due to war conditions in Europe and to difficulties of securing passage.

Geographic Origin.—Of the 51,776 aliens admitted in 1941, 51 per cent came from Europe, 22 per cent from Canada, 9 per cent from the West Indies, 5 per cent from Mexico, and the remainder from other places. Among those coming from Europe the largest number, 7,714, or 15 per cent of the total immigrants, gave Great

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Britain as place of last residence. The next largest came from France and Germany, 4,801 or 9 per cent and 4,028 or 8 per cent, respectively.

Classification of these aliens by country of last permanent residence is somewhat misleading because many refugees from Nazi-dominated countries have lived in France, Great Britain, or other countries only in the process of reaching the United States. When the same 51,776 aliens were classified by principal "races," 23,737 or 46 per cent were Hebrew. The English came next with 6,115 or 12 per cent, and then the French and Germans, with 3,283 and 2,154. The Irish, Scotch, Scandinavians, Dutch and Flemish, Spanish Americans, and probably the Mexicans,* each were represented by 1,000-2,000. No other "race" was represented by as many as 1,000.

Hebrews.—The immigration of Hebrews during the years from 1933 to the present reflects the growing Nazi domination of European countries. The number of Hebrews who entered this country rose gradually from 2,372 in 1933 to 19,736 in 1938; then there was a tremendous increase to 43,450 in 1939. Probably as a result of the war the number declined to 36,945 in 1940 and dropped still further in 1941. In 1933 they comprised only one-tenth of the admissions, over half in 1939 and 1940, and, as previously stated, approximately 45 per cent in 1941. There is little doubt that many of these were refugees seeking life and liberty in a new world.

The problems of adjustment and assimilation are enhanced by the tendency of immigrants to concentrate in a few localities. Of the total 51,776 aliens admitted in 1941, over half (26,606) gave New York State as their intended residence. Nearly 70 per cent of the Hebrews made a similar declaration.

Occupations.—It is of interest to

examine briefly various personal characteristics of aliens admitted during the last fiscal year. According to the preliminary report of the Immigration and Naturalization Service, 30,005 or 58 per cent of the total 51,776 immigrants, stated they had no occupation. Presumably these were chiefly women and children or elderly people coming to join relatives. Among the 21,771 who listed an occupation, 28 per cent belonged to the professions, 31 per cent were in the commercial field, and 24 per cent were skilled workers. Only 2 per cent were classified as farmers, 6 per cent as servants, and 4 per cent as laborers; another 5 per cent gave a miscellaneous list of occupations. Among the Hebrews, the only group large enough to be considered separately, 24 per cent belonged to the professions, 47 per cent to the commercial field, and 22 per cent to the class of skilled workmen.

Sex and Age Groups.—Males and females were about equally divided among the 1941 immigrant aliens. More specifically, 45 per cent were males and 55 per cent were females. Slightly more than half (51.4 per cent) of the group were between 21 and 45 years of age, with another 17.6 per cent in the ages from 46 to 60. Thus 69 per cent of the total were in the productive ages. In the total population of the United States in 1940, 55 per cent fell in the age groups between 20 and 60. The English had a much higher proportion of children under 11 years of age than did the other races, possibly due to the war-time evacuation of children. In regard to marital status, the proportions were: single, 40 per cent; married, 53 per cent; widowed and divorced, 7 per cent. Seventy per cent of the group stated that they were coming to join relatives and 15 per cent were joining friends.

NATURALIZATION

At the time of writing, Census data concerning the citizenship of our foreign-born white population are available only for the group as a whole. Statistics showing citizenship

* One of the "All Other" groups contained 1,924. These were chiefly natives of Mexico. See: Immigration and Naturalization Service, Preliminary Report for the Fiscal Year Ended June 30, 1941.

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by country of birth have not yet been released.

Among the 11,419,138 foreign-born whites enumerated in the 1940 Census, 63.5 per cent reported themselves as naturalized citizens. (Population Series P-9, U.S. Bureau of Census). There was no marked variation in this proportion among the Northern states with large numbers of foreign-white population. The states with lowest percentages of naturalized citizens among their foreign-born whites were Texas and Arizona. In each of these only 32 per cent of this group had been naturalized. Both states contain a large number of Mexicans.

Although the Census has not yet released data in regard to immigrants who have not been naturalized, a certain amount of information along this line is available from the alien registration of 1940.

ALIEN REGISTRATION OF 1940

During 1941 more complete information became available concerning the aliens who registered under the provisions of the Alien Registration Act of 1940. The most recent statistics show that 4,921,452 aliens were registered in the continental United States and its territories and possessions. Accordingly, aliens comprised less than 4 per cent of the total population in those areas. Among the aliens, 73 per cent came from Europe, 21 per cent from North and Central America, 4 per cent from Asia, and the remainder from Oceania, South America, Africa, and other countries. Italy contributed the largest number of any single nation, having 695,363 or 14.1 per cent of the total, and Canada was second with 448,012 or 9.1 per cent. Other countries ranking high in their contributions were Poland with 9 per cent of the total number of aliens, Mexico with 8.5 per cent, Russia with 7.5, Germany with 6.4, and Great Britain with 5.9 per cent. Each of the remaining countries had less than 5 per cent of the total group.

Final data were not available showing the distribution of these aliens by residence, occupation, age, and other

characteristics. However, a preliminary analysis of 4,741,971 registered aliens disclosed that nearly 37 per cent were concentrated in the two states of New York and California. The former had 1,212,622 or 25.7 per cent, and the latter contained 526,937 or 11.1 per cent. Other states with large numbers of aliens were Pennsylvania with 361,475, Massachusetts with 356,028, and Illinois with 319,385. Apparently the alien population is an urban one, for a preliminary estimate shows that about 47 per cent of all aliens live in cities which have a population of more than 500,000. According to the 1940 Census the corresponding percentage for the total population of the country is 17.

In its "Interpreter Release" for Aug. 14, 1941, the Common Council for American Unity presented some interesting results concerning characteristics of these registered aliens on the basis of a sample tabulation of 200,000 cases. Estimates based on this sample emphasized the changing origin of our immigration and the aging of the foreign-born group. Among the registered aliens entering this country before 1924, the nationalities represented by largest numbers were Italians, Polish, and Russians. For registered aliens admitted after 1924, the prominent groups were the Germans, Canadians, and English. On the basis of this same sample, the median age of the aliens was estimated to be 48 years, as contrasted to a median age of 29 for the total population of the country, according to recent 1940 Census data. If inability to sign the registration blank except with an X or similar mark is taken to signify illiteracy, then even on this simple basis, it was estimated that approximately 15 per cent of the aliens who registered were illiterate.

In connection with a problem such as this, the President in June, 1941, authorized the use of \$14,000,000 of the WPA appropriation for a National Citizenship Educational Program. The purpose of the Program is to provide increased facilities for aliens who are preparing themselves for naturalization. The Program is to

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be carried on under the joint guidance of the Department of Justice and the WPA, with each state organizing its own advisory council on Education for Citizenship. The concentration of the aliens in a few states and cities should serve to facilitate this Program.

LEGISLATION AFFECTING MINORITY GROUPS

General.—Even before the outbreak of war on Dec. 7, Congress and Administration officials had given considerable attention to the status and regulation of aliens in the United States. Numerous bills appeared in the Senate and House concerning the entry and control of immigrants from foreign countries. Among the bills passed, two are of particular importance.

The Bloom Bill (H.R. 4973), enacted in June, 1941 and known as Law 114, empowered the President to prescribe rules and regulations governing the entry and departure of all persons during a period of war or national emergency. As a result, on Nov. 14, 1941, President Roosevelt issued a proclamation restricting the movements of both American citizens and aliens into and out of the United States and its possessions, particularly by extending requirements for permits both for entrance and for departure. One important innovation of these regulations was the provision whereby a rejected application for permit to enter may be appealed for a re-hearing of the case by a Board of Review set up for that purpose.

The Russell Bill (S. 913), enacted in June, 1941, and known as Law 113, provided another curb on immigration by authorizing consuls to refuse immigration visas to any alien believed to be seeking entrance into the United States for the purpose of engaging in activities which might endanger the public safety of this country.

Dickstein Bill.—Of interest to the foreign-born group seeking United States citizenship is the Dickstein Bill (H.R. 6250), still pending in the House. It includes a proposal to

waive the usual educational requirements in the case of any applicant for naturalization who is 50 years of age or over, has resided continuously in this country since prior to July 1, 1924, and either has already applied for citizenship or does so within a stated time after the passage of the law. Adoption of this provision would undoubtedly speed up the naturalization of many would-be citizens who are unable to meet the present educational requirements.

DECREES AND DECISIONS

Visa Action.—In addition to these legislative actions, during 1941 various administrative and judicial decrees and decisions were concerned with the status of minority groups, especially with that of European immigrants. For instance, on June 5 the Department of State instructed its consular officials to refuse a visa, either for temporary access or for permanent residence, to any applicant who has close relatives still residing in "certain countries" or in territories controlled by those countries. According to the State Department, this action was taken because of an increasing number of instances in which persons were permitted to leave "certain European countries" only after promising to act in the United States as agents for those countries.

Regulations for Alien Conduct.—President Roosevelt's decrees of Dec. 7 and Dec. 8 prescribed general regulations for the conduct of aliens who are natives of countries at war with the United States. These regulations included the provisions that aliens from those countries may be barred from the neighborhood of forts, camps, airports, power plants, shipyards, and similar areas of war efforts; that they may not possess firearms; may not enter any kind of aircraft without proper authorization; and may not change address or occupation unless in compliance with governmental regulations. In accordance with the authority vested in him by these Presidential decrees, Attorney General Biddle has issued various detailed prohibitions along these lines

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and has instructed the Federal Bureau of Investigation to take into custody all Germans, Italians, and Japanese who are considered dangerous to the safety of the United States. However, the Attorney General has repeatedly affirmed his determination to see that, in so far as possible, no alien is held unjustly or without a fair hearing before qualified Boards.

RACE DISCRIMINATION IN DEFENSE WORK

Protection of members of all minority groups and prevention of discrimination against them are particularly difficult in times of war and national emergency. During the year there was some evidence that both the foreign-born group and the colored population have been discriminated against in the conduct of our defense efforts. It is impossible to gauge the extent of such discrimination but that it does exist is indicated by the frequent appeals of President Roosevelt and defense authorities to employers that they hire their workmen without respect to race and nationality. Furthermore, on June 25, 1941, the President set up in the Office of Production Management a Committee on Free Employment Practices for the prevention of discrimination in the filling of national defense jobs and in the programs of vocational training for such positions. The executive order establishing the Committee stated that "it is the policy of the United States to encourage full participation in the national defense program by all citizens of the United States, regardless of race, creed, color, or national origin, in the firm belief that the democratic way of life within the nation can be defended successfully only with the help and support of all groups within its borders." Moreover, the order called for the elimination of discrimination in all departments and agencies of the government connected with vocational and training programs for defense production, and decreed that all defense contracts should contain a provision obligating the contractor not to discriminate against any worker because of race, creed,

color, or national origin. Furthermore, the Committee on Free Employment Practices was empowered to receive, investigate, and act upon complaints of discrimination in violation of these provisions.

The creation of the Committee was apparently prompted by evidence that some employers in defense activities were limiting their labor forces to certain groups. The employment of non-citizens in private industries on government contract is prohibited by law in a few instances, but only in a few. Chief of these is the prohibition of alien labor in the manufacture of aircraft and aircraft parts for the government. However, early in 1941, the Social Security Board reported that many establishments, even some only remotely connected with defense efforts, were going far beyond the legal requirements and were refusing to hire any laborer who could not prove his citizenship. As a result, a shortage of skilled and trained workmen was likely to arise in those industries legally required to restrict their labor forces to citizens. The requirement of citizenship was found to be particularly extensive in the industrialized areas of New England, New York, and New Jersey, the Northwest, and the Pacific Coast.

NEGRO DISCRIMINATION

There is evidence that Negroes also encounter discrimination in finding jobs in defense industries and in securing admittance to programs for vocational training along defense lines. On the other hand, according to the *Monthly Labor Review*, the relative increase in placements by state employment services in the five months from January to May, 1941, over the same period in 1940, was greater for Negroes than for whites in 16 states, in several of which defense efforts were prominent. Much of this increase for Negroes had come in construction and service industries.

Groups interested in the Negro have complained of racial discrimination in the armed forces. Whereas the Army uses but tends to segregate colored troops, the Navy virtually

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excludes Negroes except in menial capacities where chance of promotion is slight. Recently some beginning has been made in providing aviation training for Negroes, but so far the facilities have been limited. These problems are difficult of solution, but it is hoped that in the interest of national unity increasing opportunities for service to their country will be given not only to Negroes but to members of all minority groups.

AMERICAN INDIAN AFFAIRS

BY ALLAN G. HARPER

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INDIANS AND WORLD POLITICS

The sharpening struggle for power in Latin America has bestowed a hitherto unsuspected importance upon the population of 30,000,000 Indians in North and South America. Strange as it would seem at first glance, the small Indian population of the United States was traveling at a rapid rate from its past of forest politics to world politics, though few of them were aware of the development.

The common origin, the political, social, and economic position of the indigenous populations in the Americas, and the potential use that could be made thereof, had not escaped the pressure propagandists. The purpose behind the formal action of a Nazi high court a few years ago in declaring Indians to be "Aryans" became clearer. The historical past of the Indians of the United States became an exportable propaganda product in two directions: (1) to Europe for use in answering criticisms of the totalitarian treatment of minorities; and (2) to Latin America for use in stirring opposition among the Indian populations against the foreign policy of the United States. The linkage of the Indians of this country to the vast indigenous populations to the south and to the large canvass of world events was more particularly signalized in the establishment of the Inter-American Indian Institute.

INTER-AMERICAN INDIAN INSTITUTE

Long a project in the minds of leading Indianists on both continents, the

Inter-American Indian Institute (Instituto Indigenista Interamericano) came formally and completely into existence towards the end of 1941 through the final necessary ratification of an international convention by the Republic of Ecuador. Other powers which had previously taken like action are Mexico, El Salvador, United States of America, and Honduras; while Nicaragua, Costa Rica, Cuba, Peru, Panama and Paraguay had affixed their signatures. The convention had had its origin at the First Inter-American Indian Conference, held at Patzcuaro, Mexico, in April, 1940, which in turn had been summoned by the Eighth International Conference of the American Nations, held at Lima, Peru in 1938.

The Institute rests upon the recognition of the fact that the Indian problem is of interest to all the American nations. It aims at clarifying, stimulating, and coordinating the Indian policies of the various nations and at improving the living standards of the Indians. In accordance with the terms of its creation, the Institute has a governing body, an executive committee, and a director. Provisionally, its headquarters have been established at Mexico City. Permanent organization has not yet been completed. Two publications have been established—a quarterly, *American Indigena* and a bimonthly supplement, *Boletín Indigenista*, which makes use of both the Spanish and English languages.

One aim of the Institute is to encourage the establishment of national

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institutes by the cooperating countries to serve as clearing houses and agencies of collaboration with the central body. Such a body has been provisionally established in the United States Department of the Interior as the Office of Inter-American Cooperation, through funds made available by the Office of the Coordinator of Inter-American Affairs.

REORGANIZATION OF THE INDIAN BUREAU

After long study of the problem, a plan for reorganizing the Washington office of the Indian Bureau was initiated, representing a further important step in the reform of our Indian system, dating back to 1928. The manifold interests and activities of the Bureau, as the agent of Congress in exercising its plenary power in Indian affairs, embraces almost the entire gamut of human relations and adaptations to physical environments. Apart from the immediate office of the Commissioner of Indian Affairs, to which are attached the Assistant Commissioner, Chief Counsel, Personal Field Representatives, and the Information Division, the personnel and activities of the Washington Office, under the new plan, are organized as follows:

1. Administrative Branch: budget preparation; accounting and auditing; office management; personnel;
2. Planning and Development Branch: research and surveys; stimulation and coordination of reservation plans; Indian self-government; statistics and records;
3. Indian Resources Branch: agricultural extension; forestry and grazing; civilian conservation corps-Indian division; soil and moisture conservation operations; land transactions;
4. Community Services Branch: health; education; Indian welfare; and
5. Engineering Branch: irrigation; roads; construction.

INDIAN HEALTH PROGRAM

Having pioneered the use of sulfanilamide in the treatment of trachoma and having secured spectacular results, Indian service physicians transferred in 1941 the emphasis of

the trachoma program from school children (among whom it had been initiated) to the adult Indian population. Whereas once there was an almost hopeless fear that this blinding scourge could not be conquered, its virtual eradication would now seem to be feasible. The Indian service has attracted world-wide attention by its attack upon this health problem which has wide applications among other populations of the world.

Important progress was also made in 1941 in dealing with tuberculosis by which Indians have been severely ravaged across the centuries. Because of the inadequacy of existing service sanatoria, the Indian Bureau expanded its cooperation with the states of Minnesota, North Dakota, and Wisconsin in hospitalizing Indian patients in state institutions. Construction was also started upon a new 350-bed hospital at Takoma General Hospital and Sanatorium. In collaboration with the National Tuberculosis Association, the Indian Bureau produced a motion picture film, "Another to Conquer," which is now being widely shown among both Indian and white populations to arouse people's cooperation in the treatment and prevention of the disease.

Two additional Indian service hospitals were approved by the American College of Surgeons during the year, bringing the total of approved institutions to 12. Determined to raise the standards and effectiveness of operation, the Indian Bureau began a systematic survey of its medical institutions with a view to making definite recommendations to Congress.

An innovation of recent years has been the program among Indians to increase lay knowledge and participation in health programs, and to this end during 1941 plans were made nearly to double the number of nurse aides, and a special course for training ward attendants was introduced as a part of the Civilian Conservation Corps-Indian Division program.

Steps were also taken, in collaboration with the United States Bureau of the Census to procure sounder and more accurate vital statistics with ref-

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erence to the Indian population. In 1932, the appropriation for Indian health work was \$4,550,000; in 1941, it was \$5,748,210; in 1942, \$5,879,615.

INDIAN EDUCATION

Against the background of fundamental reorientations in Indian educational policy—curriculum emphasis upon environmental instruction, training in skills to use land productively, shift from boarding to day and public schools, expansion of opportunities for higher education, and development of truly community schools—there were other more noticeable developments in 1941. There came into existence four series of publications, issued under the auspices of the Education Division; viz., the *Sherman Pamphlets*, dealing with Indian life and customs; the *Indian Handicraft Pamphlets*; *Materials on Cooperatives, Conservation, etc.*; and, most significantly of all, *The Indian Life Series* which is composed of a number of bilingual school readers. Publication of the latter series represents an important innovation in Indian education and is in pursuit of the basic policy of attempting to use Indian languages constructively wherever they are commonly the native tongue of the Indians.

In cooperation with the U. S. Office of Education, the Indian Bureau inaugurated in various of its secondary schools defense training programs to fit Indians into mechanical trades, particularly those dealing with the production of armament, airplanes, etc. The ready admission of the first graduates of these schools indicated their success in training Indians in kinds of work for which they have traditionally shown marked capacity.

Organized in May, 1941 was the American Indian Youth Organization, bringing a new element of the country's population into the stream of the youth movement. The constitution of the new organization placed emphasis upon the Indians' interest in relating their education to local problems and in adjusting themselves to home and community life.

Pursuing a policy of recent origin, the Education Division opened the Blackfeet Museum of the Plains Indians at Browning, Mont., the second of such institutions. It houses, in addition to a valuable collection, the Plains Indian Cooperative Craft Shop.

In 1932, there were 29 non-reservation boarding schools; in 1941, 18. In 1932, the enrollment of these institutions was 14,266; in 1941, around 5,000. In 1932, reservation boarding schools numbered 48; in 1941, 31. The enrollment over the period changed from 9,948 to 6,478. In 1932, the number of day schools was 226; in 1941, 356. The enrollment over this period increased from 9,134 to 22,127. In 1932, the budget for Indian education was \$10,185,400; in 1941, \$10,847,120; in 1942, \$10,761,160.

INDIAN RESOURCES AND SELF-GOVERNMENT

The economic rehabilitation of the Indians has revolved around certain definite policies ever since the passage of the Indian Reorganization Act in 1934—to stop the historic process of land alienation; to upbuild the land base, especially for the landless Indians; to provide Indians with access to adequate agricultural and industrial credit; and to conserve Indian resources from soil and moisture depletion. Indian land holdings in 1933 had declined to 52,000,000 acres, and the process was still in progress. The downward trend having been reversed, Indian lands increased to 55,500,000 acres in 1941. The Revolving Loan Fund, established by the Indian Reorganization Act, had risen to \$5,250,000, making available to Indians for the first time a substantial measure of economic aid organized and operated on modern credit principles.

The number of beef cattle had risen from 165,300 in 1933 to 278,200 in 1940. The number of dairy cattle had risen from 16,400 to around 45,000 over the same period. Notable achievements in conservation, made possible through the Civilian Conservation Corps-Indian Division and special funds for Soil and Moisture Conservation, had permitted the establishment of a large

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number of erosion-control and water-conservation projects on several heavily depleted Indian areas, notably on the New Mexico Pueblo grants, and on the Papago, Navajo, Wind River, and Pine Ridge reservations. The Bureau instituted on five Sioux reservations in South Dakota a special project for the consolidation of Indian allotted lands in an attempt to demonstrate the feasibility of forming blocks of economically usable Indian lands, thus correcting the wreckage left by the 19th century policy of individual land allotment.

The Indian Reorganization Act of 1934, the motive force behind present administrative policies in Indian affairs, has resulted in a reversal of the currents that were carrying the Indians of the United States toward oblivion. Indian tribal government, previously discouraged or only tolerated, was specifically encouraged by the act. Today, a total of 145 tribes, including 41 Alaskan villages, having adopted the Indian Reorganization Act by referendum, have drafted and adopted constitutions providing for political organization and economic self-direction. In terms of population, these 145 tribal groups represent 109,430 Indians.

BUREAU APPROPRIATIONS

Like all units of the United States Government, appropriations to the Indian Bureau are made on a fiscal year basis, the period ending June 30. Regular (gratuity) appropriations from the Treasury rose from \$31,795,200 in 1941 to \$33,343,268 in 1942, the increase being due in part to the transfer of an item of \$1,150,000 for Indian Rehabilitation from the appropriation of the Farm Security Administration to the Indian Bureau direct, in part to increased appropriations for health and educational work, and in part to increased appropriations for needed construction. Appropriations from the Indian's tribal funds increased from \$1,779,656 in 1941 to \$1,974,610 in 1942, principally for the purchase of land, creation of tribal industrial loan funds, and tribal relief. Although in the case of a few tribes such appropriations are made by Congress over the protest of

the Indians, it can be said that increasingly their expenditure follows upon definite agreement with the tribes and frequently upon the tribes' own initiative, acting through their tribal councils.

INDIANS UNDER THE SELECTIVE SERVICE ACT

More than 30,000 Indians were registered for military service under the Selective Training and Service Act of 1940, with little difficulty. The Yakimas of Washington and the Six Nations of New York contested the application to them of the act in the Federal courts on the ground that it violated their treaty-guaranteed sovereignty as independent nations, although in both cases the Indians had no objection to serving the country. Federal Judges Lewis B. Schwelienbach and Jerome Frank rejected the pleas in friendly and understanding decisions. Among the Navajos a small handful of Indians deliberately resisted registration, but, on the other hand, large numbers of Navajos, believing that war had actually been declared, bade their families farewell and reported to the agency with arms and horses. Similarly, on the Papago Reservation, a dissident village group resisted registration and had to be forcibly rounded up by the authorities. Refusing to register on religious grounds which they refused to explain, six Hopis were sentenced to short terms.

RESEARCH IN INDIAN PERSONALITY

A new type of research was launched jointly by the Office of Indian Affairs and the Committee on Human Development of the University of Chicago, with the initiation of a study of the democracies of Indian tribes. The initial research, which will take two years and may be extended beyond that period, is to determine the extent to which Indian native autonomy in the United States has been affected by the many years of Federal rule, which many observers believe all but destroyed the roots of Indian life. Essentially the study will be directed

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toward Indian personality at all the age levels as that personality moulds and is moulded by the community. Professional direction of the survey will be in the hands of the University of Chicago staff and the regular personnel of the Indian service will be utilized in the field, in accordance with the technique used successfully by the Committee on Human Development in other researches of this kind.

PSYCHIATRIC AND MEDICAL RESEARCH

Completed was a highly significant piece of research conducted by Dr. Alexander H. Leighton and Dr. Dorothea C. Leighton, of the Phipps Institute (The Johns Hopkins Hospital, Baltimore) dealing with the therapeutic elements and values of Navajo prayer ceremonies, and published in various medical journals. The Leightons launched further researches aimed at understanding the cultural characteristics of the Navajo Indians from the standpoint of medical science and psychology and at determining the means whereby medical science may be integrated with the native medical and religious concepts. Ultimately, it is planned to prepare a manual for the use of the Indian service in order that it may develop a progressive medical program to provide a more efficient application of approved scientific knowledge and to indoctrinate the principles of health and hygienic living, utilizing appropriate native beliefs and practices.

ALASKAN PROBLEMS

Organization of the new Reindeer Service in Alaska was completed, providing much needed machinery and personnel to conserve the great reindeer herds of Alaska in behalf of the subsistence of the natives. Increasingly, as great numbers of Army and Navy personnel, as well as civilian workers, poured into the Territory in the interest of national defense, the

position of the Indians and Eskimos became acute, creating problems of an economic and social character not previously encountered. The responsibility of the Bureau to guide the native population through this period of stress became clearly apparent, and the problem was receiving intensive study as the year ended.

HANDBOOK OF INDIAN LAW

Books about Indians continued to teem from the country's presses, attesting the continued and almost universal interest in the country's first inhabitants. A notable work was the publication of the *Handbook on Federal Indian Law*, prepared by a group of legal workers under the direction of Felix S. Cohen, Assistant Solicitor of the Department of the Interior. Providing for the first time a comprehensive review of all Indian statute law and court decisions, the *Handbook* supplies a needed source of information in the total task of reorganizing and reforming the country's system of handling its oldest and most famous minority.

ARTS AND CRAFTS

The Indian Arts and Crafts Board, as an item in its program of creating public appreciation of the beauty and usefulness of Indian arts and crafts, staged an important exhibition at the Museum of Modern Art in New York City in the spring of 1941. A cross-section of the artistic achievement of the Indian across 15,000 years, the exhibition was divided into a presentation of materials upon a threefold basis, prehistoric, historic and modern. With the exhibition as background, the American Association on Indian Affairs conducted a three-day Institute on the Future of the American Indian, with a group of distinguished authorities in Indian affairs as both audience and speakers. The proceedings of the Institute will be published in 1942 by the University of Oklahoma Press.

COGNATE SOCIETIES AND RESEARCH INSTITUTIONS

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(For further information, the reader may address the following organizations)

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| AMERICAN COLONIZATION SOCIETY, 514-6 Colorado Bldg., Washington, D.C. | JEWISH WELFARE BOARD, 220 Fifth Ave., New York City. |
| AMERICAN ETHNOLOGICAL SOCIETY, American Museum of Natural History, New York City. | LAKE MOHONK INDIAN CONFERENCE, Lake Mohonk, N. Y. |
| AMERICAN JEWISH COMMITTEE, 386 Fourth Ave., New York City. | LITHUANIAN ALLIANCE OF AMERICA, 307 W. 30th St., New York City. |
| ANCIENT ORDER OF HIBERNIANS IN AMERICA, 1648 Westmont Ave., Pittsburgh, Pa. | NATIONAL ASSN. FOR ADVANCEMENT OF COLORED PEOPLE, 69 Fifth Ave., New York City. |
| CENTRO VASCO AMERICAN SOCIETY, 48½ Cherry St., New York City. | NATIONAL COUNCIL OF JEWISH WOMEN, 1819 Broadway, New York City. |
| ENGLISH-SPEAKING UNION OF THE U.S., 30 Rockefeller Plaza, New York City. | NATURALIZATION AID LEAGUE, 175 E. Broadway, New York City. |
| FEDERATION DE L'ALLIANCE FRANÇAISE, 22 E. 60th St., New York City. | NETHERLAND-AMERICAN FOUNDATION INC., 10 Rockefeller Plaza, New York City. |
| FEDERATION OF POLISH JEWS IN AMERICA, 225 W. 34th St., New York City. | ORDINE FIGLI D'ITALIA IN AMERICA, 225 Lafayette St., New York City. |
| HEBREW SHELTERING AND IMMIGRANT AID SOCIETY OF AMERICA, 425 Lafayette St., New York City. | POLISH NATIONAL ALLIANCE, 142 Grand Ave., Brooklyn, New York City. |
| HOLLAND SOCIETY OF N.Y., 90 West St., New York City. | SCRIPPS FOUNDATION FOR RESEARCH IN POPULATION PROBLEMS, Miami University, Oxford, O. |
| HUGUENOT SOCIETY OF AMERICA, 122 E. 58th St., New York City. | SONS OF ITALY, 377 Broadway, New York City. |
| HUNGARIAN SOCIETY OF N.Y., 270 West 89th St., New York City. | YOUNG JUDAEA, INC., 111 Fifth Ave., New York City. |
| INDIAN RIGHTS ASSN., INC., 301 S. Seventeenth St., Philadelphia, Pa. | YOUNG MEN'S HEBREW ASSN., Lexington Ave. and 92nd St., New York City. |
| JAPANESE ASSN., INC., 1819 Broadway, New York City. | YOUNG WOMEN'S HEBREW ASSOCIATION, 31 West 110th St., New York City. |
| JEWISH NATIONAL WORKERS' ALLIANCE OF AMERICA, 251 Fourth Ave., New York City. | ZIONIST ORGANIZATION OF AMERICA, 111 Fifth Ave., New York City. |

DIVISION XV

SOCIAL PROBLEMS AND CONDITIONS

PUBLIC AND PRIVATE SOCIAL WORK

BY RALPH E. SPEAR
EXECUTIVE ASSISTANT, AMERICAN PUBLIC WELFARE ASSOCIATION

THE SOCIAL SERVICES AND NATIONAL MORALE

During 1941, public and private welfare agencies experienced a transition from an essentially peaceable activity to one which may eventually prove to be one of the most important factors in the winning of the war. In the European experience there has been an opportunity to examine the role of social services in war-time. It is generally conceded now that France fell partly because of the low state of national morale, a condition resulting in no small part from the official decision to curtail all social assistance and insurance programs. In Great Britain, on the other hand, new programs of social assistance and insurance have been established, existing programs have been broadened in scope and coverage, and the amazing morale of the British people testifies to the wisdom of such steps during a period of national emergency. It has meant that the social service and assistance agencies of Great Britain have carried very heavy responsibilities with real devotion to their tasks. The public and private agencies in this country are dedicated to the successful discharge of a similar responsibility.

PUBLIC—PRIVATE RELATION- SHIPS

As was perhaps to be expected, the initial period of the national defense program found public and private agencies in some disagreement on the

proper division of responsibility between them. In a series of regional conferences called by the American Public Welfare Association to consider the social problems of a defense economy, public welfare administrators indicated clearly that there was need for a planned relationship between public and private programs. There were objections that the widespread use of volunteers in the home service program of the American Red Cross would make it impossible for public agencies to cooperate, since public agency records must be held confidential under the law. There was also some concern on the part of public officials lest the many appeals for private donations, dramatized as they are, be understood by a large part of the public as a bulwark against need in this country, leaving the impression that the public assistance agencies have little to do but provide assistance to the aged, the blind, and dependent children. Such an impression, to the extent that it might be translated into arbitrarily reduced public agency budgets would, of course, be a serious blow to the maintenance of public morale. Public welfare administrators also stressed the fact that, for the first time in such a period of national emergency, this country is served by a network of public welfare programs reaching into every last village in the land. Such an important resource should not be overlooked in the provision of new social services.

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The representatives of private agencies participating in these discussions pointed to the need for public agencies to develop greater elasticity of operation, so that all resources, public and private, can be utilized in the difficult times ahead. They also made the point that many public agencies are unable to assume responsibility for emergency services because of a lack of either funds or legal authority.

By the end of 1941, with the nation actually at war, it was apparent that both public and private agencies would need to bend every effort to the job of providing war-time social services and assistance, a task which will call for the combined efforts of both groups. It seems clear, however, that the programs operating under government auspices will play a more important part than ever before.

COORDINATION OF PRIVATE AGENCIES

One of the problems recognized in putting the nation on a war footing was the need for recreational facilities in the vicinity of camps, bases, and manufacturing areas. In order that the various national private agencies might participate in the provision of such recreational opportunities without competition and without duplication of effort, the United States Service Organizations for National Defense, Inc. was established. The U.S.O., as it became popularly known, is a non-profit corporation which brings together the Young Men's Christian Association, National Catholic Community Service, Salvation Army, Young Women's Christian Association, Jewish Welfare Board, and National Travelers Aid Association. The organization has as its stated purpose "to serve the religious, spiritual, welfare, educational and social needs in the armed forces and defense industries of the United States, and in general to contribute to the morale of our defense forces and the communities in which they are based."

It is contemplated that more than 300 service clubs will be constructed throughout the country with funds

obtained through Federal appropriation. These clubs will then be operated by U.S.O. personnel with funds obtained from voluntary subscription. In June, a nation-wide drive resulted in the oversubscription of a quota of nearly \$11,000,000, an amount estimated as covering the first year's needs.

The American Red Cross will also be providing services which fall within the broad stated purpose of the U.S.O., but the Red Cross services will originate within the camps. In this respect, the Red Cross serves in a liaison capacity between the soldier in the camp and the family at home whenever social questions are raised. In the home communities, of course, a variety of social agencies may be involved in any individual case, but the point of clearance at the camp will be through the American Red Cross. Immediately after war was declared in December, 1941, a drive for \$50,000,000 was launched to support this activity and the other Red Cross services which will be forthcoming during the war.

It can not be said at the end of the year that a clear-cut division of responsibility among the several private agencies has been established. Under pressure of actual war conditions, however, there is reason to believe that a more concerted effort will be made to achieve a sound and effective organization.

OFFICE OF DEFENSE HEALTH AND WELFARE SERVICES

The coordination of public social service activities was made the responsibility of the Federal Security Administrator late in 1940, when he was designated as the Coordinator of Health, Welfare, and Related Defense Activities by the Council of National Defense. On Sept. 3, 1941, this organization was superseded by the Office of Defense Health and Welfare Services by Executive order. The Federal Security Administrator was designated as Director, and the organization itself became a part of the Office for Emergency Management.

The Office of Defense Health and

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Welfare Services was established to serve as a coordinating center for health and welfare services, both public and private; to make the services of specialists available to assist in the planning and execution of state and local programs; to keep the President informed regarding its progress; and to perform such related duties as the President may from time to time assign. The Office has followed the sound policy of collaborating with and utilizing, in so far as practicable, the facilities and services of existing agencies performing related functions. It works in conjunction with state and local defense councils wherever possible.

Committees of specialists have been established to deal with questions of health and medical care, family security, nutrition, social protection, and community organization. In addition, there has been established an Interdepartmental Advisory Council composed of the heads of Federal agencies whose activities relate to those of the Director of Defense Health and Welfare Services. The 12 regional directors of the Social Security Board have been designated as the regional directors of Defense Health and Welfare Services, and serve as chairmen of the Regional Advisory Councils, which generally represent the same Federal agencies as are related to Interdepartmental Advisory Council.

The functions of the Office are organized under two main divisions: the Division of Health and Welfare and the Division of Nutrition. The Division of Health and Welfare operates through the U. S. Public Health Service, Social Security Board, Office of Education and through two new sections, Recreation and Social Protection. The Recreation Section stimulates and coordinates recreation programs in communities near defense centers and assists in the securing of additional recreational facilities. The Social Protection Section assists state and local authorities in safeguarding the service personnel and civilian population against the dangers of commercialized vice. The major activity of the Nutrition Divi-

sion is the organization and conduct of a nation-wide campaign for the improvement of nutritional standards.

OFFICE OF CIVILIAN DEFENSE

The Office of Civilian Defense was established by Executive order within the Office for Emergency Management on May 20, 1941. Most of its functions fall outside the scope of social service as that term is usually understood, but it has two responsibilities which border on public welfare activities: "... with the aid of the Volunteer Participation Committee, [to] promote activities designed to sustain the national morale and to provide opportunities for constructive civilian participation in the defense program", and "[to] study and deal with problems which arise from the impact of the industrial and military defense effort upon local communities." These two functions are so close to some of the responsibilities of the Office of Defense Health and Welfare Services that toward the close of 1941, a joint Committee on Community Organization was set up with representation from both offices with a view to developing a unified approach to local situations.

STATE AND LOCAL AGENCIES

State and local public welfare agencies, with a few notable exceptions, have been slow to assume their full responsibilities for defense-connected social services. With a lack of clarity of approach on the Federal level to the problem of allocation of responsibility and with several private agencies conducting campaigns for funds to carry on activities described in far from specific terms, state and local agencies generally have been in a position neither to define their jobs nor to enlist public support for such activities as they could set up. State and local defense councils, through which public welfare officials have been urged to operate, have too frequently been concerned primarily with the securing of as many defense contracts as possible for their particular areas, to the exclusion of adequate planning for the health and

PUBLIC AND PRIVATE SOCIAL WORK

welfare of the people within their regions.

While this condition has obtained throughout most of 1941, the year's end brought with the actual war declaration a new determination on the part of public welfare officials to provide the basic social services on which public morale must be founded. At the Round Table Conference of the American Public Welfare Association, less than a week after the actual war declaration, 700 public welfare workers came together from nearly every state in the Union to exchange experiences and to prepare themselves to meet new demands upon their skills. While they had been utilized during the previous 12 months primarily in connection with dependency investigations for selective service boards, they saw the following as important tasks ahead: (1) maintenance of public services to economically disadvantaged people as a means of preserving public morale; (2) rehabilitation of as many assistance recipients as possible both to foster family security and to increase the nation's productivity; (3) assumption of leadership locally in mobilizing community resources, both public and private, to meet emergency demands; and (4) prompt clarification of working relationships with the several private agencies, so that no effort will be wasted.

THE CONTINUING WELFARE JOB

While public and private welfare administrators have taken steps to discharge the new responsibilities thrust upon them by the national emergency, they have not lost sight of the fact that their most important contribution to the national welfare is to continue doing their regular jobs and to do them better than ever before. Except for the new defense activities, the same general division of responsibility between public and private agencies has obtained as in previous years. Private agencies have furnished relatively little financial assistance to needy families and individuals, the major part of this task having been, as in the previous year,

the responsibility of the public agencies. Private agencies have continued to place their major emphasis on service to families and individuals in need of social adjustment. In the public field also, there has been an increasing emphasis on service, a trend which has been accelerated by a decline in general relief case loads.

ASSISTANCE TRENDS

There has been a marked downward trend in both the number of persons aided or employed and the amount of assistance and earnings from public assistance and Federal work programs during the year 1941. In January, a total of 15,064,000 persons received \$222,087,000 in assistance and Federal work program earnings; but by September preliminary statistics showed only 10,279,000 receiving \$158,616,000. (The total number of persons shown includes, of course, dependents of recipients of such assistance and earnings.)

The explanation of this decline is to be found in reemployment. From January to September the old age assistance cases increased from 2,075,000 to 2,204,000, the aid to the blind cases from 73,000 to 75,000, and the aid to dependent children cases from 376,000 to 384,000. On the other hand, general relief cases dropped from 1,257,000 to 817,000, Farm Security Administration subsistence payments cases from 59,000 to 11,000, Civilian Conservation Corps enrollees from 258,000 to 159,000, Works Projects Administration employees from 1,858,000 to 1,007,000, and other Federal project personnel paid out of emergency funds from 15,000 to 5,000. These figures reveal a normal increase among the so-called "unemployable" group, in line with the trend for the past three years. The "employable" group, however, has been rapidly returning to private employment as a result of the increased industrial activity connected with the defense program.

To public welfare administrators, however, the economic changes have presented some serious problems. While the total needs for assistance

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have declined because of defense re-employment, the individual family budget needs have generally increased because of the rising cost of living. Furthermore, the effect of defense re-employment has not been evenly distributed on a geographical basis. Industrial production has increased most in those areas where an industrial economy has been dominant previously, and it is in those very places where standards of public assistance have been most nearly adequate. Consequently, defense reemployment has fallen far short of solving the public relief problem. Unfortunately, however, the reemployment statistics, imperfectly understood, have fostered some demand on the part of the more conservative elements of the nation for a drastic curtailment of relief appropriations, which have been erroneously referred to as "non-defense" activities. Public welfare administrators recognize that in all but a few communities, there will be a decrease in the total amount needed, but they are concerned lest appropriations be decreased without relation to the amount of need that still exists.

In many of the industrial and military communities where a concentration of activity has resulted in a tremendous increase of population, practically all public programs have been affected. The aged and the dependent children who have lived in boarding homes on public assistance funds have been replaced by defense workers who are able to pay higher rates of board. While some assistance agencies have increased budget allowances, in most cases competition for housing has meant further doubling up of assistance families or a move to dangerously sub-standard dwellings. In either case, the rehabilitation task of the public assistance agency has been made much more difficult.

Another administrative problem which has been intensified is that of keeping competent staff in public welfare agencies. Toward the end of the year many administrators felt the pinch of outside competition for personnel. Even before the declaration of war, state departments of public

welfare were reporting a staff turnover of roughly 50%, and even as high as 90% for clerical personnel. With the actual war declaration, these rates of turnover were accelerated because of the higher salaries offered by emergency agencies and because of the more dramatic appeal of the direct service agencies.

MERIT SYSTEM DEVELOPMENTS

Greater strides were made during the past year than in any previous year in the extension of merit systems in state and local public welfare departments. Not only was there a basic acceptance of the merit principle in the selection of personnel, but every state agency administering or supervising federally-aided public assistance programs adopted merit system rules and regulations. Following the classification of jobs, comprehensive examination programs were launched, and by the end of the year every state department of public welfare had completed its initial examinations.

By mid-year, the anxieties about civil service procedures had become transformed into a concern for improving test techniques and a growing interest in the staff management problems that were to come after the examining programs. With this change in attitude on the part of public welfare administrators came an awareness of the need for some revisions within state public welfare agencies which would strengthen the entire staff structure. This resulted in increased attention to positive recruitment of personnel, the increasing of salary levels in some places to reduce staff turnover, and the reorganization of administrative structures to provide formal policies and procedures for the more effective use of personnel.

The first critical test of the new-found confidence in formal selection of personnel on a merit basis came with the increased demands on the new system because of emergency war conditions. At the close of the year public welfare administrators met to discuss current operating problems, and not a voice was raised in favor of the abandonment of the

present merit systems. Instead, all of those present turned their attention to the solution of personnel problems within the framework of a merit system. The discussion brought out a number of suggestions for streamlining recruitment procedures and stabilizing the present personnel situation. Such adjustments as lowering minimum qualifications for entrance to examinations, simplifying examinations and facilitating salary, promotion and transfer adjustments were considered in the light of their affect upon sound administration during and after the war.

State and local public welfare administrators faced the emergency situation with a determination to keep their agencies staffed with the best people available and they were ready to accomplish this by increasing emphasis on in-service training and by selecting "understudies" for the key positions in their agencies. They contemplated the assignment of new service responsibilities to their staffs and the supplementation of continuing services with new emergency activities.

LEGISLATIVE CHANGES

The Confidential Requirement.—

The 1939 amendments to the Social Security Act had certain implications to state legislatures, in that some state legislation had to be revised. The Federal requirement that all public assistance information be held confidential resulted in legislative changes to protect such records in 36 states; in the other states it was possible to deal with the problem on the basis of existing administrative powers. This change means that henceforth it will not be possible to publish lists of those receiving assistance. Formerly such lists had occasionally been published, to the great and unnecessary humiliation of needy individuals, largely because such official publication of long lists provided a source of newspaper revenue.

Applicant Resources.—Another Federal amendment required that a state agency, in determining need, take into account any other income

and resources of an applicant for public assistance. Only a few states had not been following that procedure, and their 1941 legislation brought them into conformity. In some of the western states, where the pressure of the pension groups was strong for the liberalization of assistance to the aged, some difficulty was encountered in applying the more restrictive provisions of the Federal amendment.

Merit System Adjustment.—

Eighteen states enacted laws relating to the merit system for public welfare employees in accordance with the Federal requirements. Most of the 1941 merit system enactments, however, went beyond the mere requirements; they represented sound measures designed to strengthen the merit system in its actual operations. They provided for such things as extension of the coverage of merit selection, relaxation of state and local residence requirements for personnel, provision of military leave and reinstatement upon the completion of military service, and prohibitions dealing with political activity on the part of public welfare employees.

Eligibility Requirements.—In addition to these legislative changes which were largely stimulated by Federal requirements, many liberalizations in eligibility requirements were brought about. While the Federal act provides for the matching of grants for old age assistance, aid to the needy blind, and aid to dependent children only up to a certain maximum amount, many states have purposely avoided such maxima in their own legislation so that the exceptional case might be served adequately. In 1941, six states deleted maximum limits on payments, and ten states set such limits at a higher figure than had previously obtained.

Appropriations For Needy.—In more than half the states, larger appropriations for assistance to needy individuals were made in the programs for the aged, the blind, and the dependent children. It may also be observed that the financial responsibility for the state-local share of these programs shifted slightly to the

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states. Maine eliminated entirely the requirement of local participation in the financing of old age assistance; Georgia reduced such participation from 10% to 5%; Rhode Island, Minnesota, Kansas, and Ohio passed legislation contemplating increased payments by the state in certain hard-pressed localities; and in Colorado the per cent of state reimbursement of localities for administrative expenses was increased.

General Relief Measures.—In the general relief area, there was discernible no such progressive pattern as characterized legislation for categorical assistance. In California the legislature adjourned without making any appropriations for general relief. While this had the indirectly beneficial administrative effect of unifying the state's concern for all public assistance programs in the State Department of Social Welfare, it meant that the entire financial burden was to be returned to the counties, an action which will almost certainly result in a reduction of standards of assistance. Legislative investigating committees concerned with the programs of general relief were set up in California, Michigan, Minnesota, Ohio, Oregon, and Rhode Island, an indication of the general feeling that programs of general relief are something less than satisfactory. In Illinois the legislature once again balked at the proposal that the general relief program be integrated with the other public assistance programs. It did, however, remove some small element of uncertainty by changing the name of the Illinois Emergency Relief Commission to the Illinois Public Aid Commission. The actual administration of relief remains a township responsibility in all but a few counties.

Some small encouragement to those who are interested in the sound administration of general relief may be found in Indiana, where the functions of the Governor's Commission on Unemployment Relief were transferred to the State Department of Public Welfare, where the categorical assistance programs are already assigned. The local administration of

general relief in Indiana remains a township responsibility.

In New York State, it remained for the Governor to veto a provision which would have initiated a "work-for-relief" program. Despite the generally unsatisfactory experience which other states have had with such programs, the pressure to put to work those aliens who are barred from W.P.A. employment very nearly launched New York State into the social and economic difficulties of "work for relief."

SUPREME COURT DECISION IN CALIFORNIA INDIGENT CASE

Toward the end of the year, the U. S. Supreme Court handed down a decision of outstanding importance in the case of *Edwards v. California*. The State of California along with a number of other states, had legislation making it a misdemeanor for any person to bring or to assist in bringing into the state any indigent person who is not a resident of the state. This law had been invoked to maintain border patrols and to stem the migration of the dispossessed of the drought areas. Under it, one Paul Edwards had been convicted of transporting an unemployed brother-in-law from Texas to the Edwards home in California.

In holding the California statute unconstitutional, Justice Byrnes quoted Justice Cardozo: "The Constitution was framed under the domination of a political philosophy less parochial in range. It was framed upon the theory that the peoples of the several states must sink or swim together, and that in the long run prosperity and salvation are in union and not division." Justice Byrnes went on: "It is difficult to conceive of a statute more squarely in conflict with this theory than the Section challenged here. Its express purpose and inevitable effect is to prohibit the transportation of indigent persons across the California border. The burden upon interstate commerce is intended and immediate; . . . We think this statute must fail under any known test of the validity of State in-

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terference with interstate commerce."

Justice Douglas, concurring in the decision of the Court, based his decision on different grounds. He contended that any abridgment of the right of persons to move freely from state to state is a violation of the privileges and immunities clause of the Fourteenth Amendment. The California statute, he said, would introduce "... a caste system utterly incompatible with the spirit of our system of government. It would permit those who were stigmatized by a State as indigents, paupers, or vagabonds to be relegated to an inferior class of citizenship." Justices Black and Murphy joined in this opinion.

Justice Jackson added: "This court should, however, hold squarely that it is a privilege of citizenship of the United States, protected from state abridgment, to enter any state of the Union, either for temporary sojourn or for the establishment of permanent residence therein and for gaining resultant citizenship thereof. If national citizenship means less than this, it means nothing."

The tone of the various opinions gives some hope that in the not too distant future the citizenship rights of persons receiving assistance may be clearly upheld. The right to vote, which is a basic right of citizenship, is still denied to recipients of public assistance in many states. The court decision, in upholding a man's right to move about freely in search of better economic opportunity, is a great step forward; but the temper of the Jus-

tices, as revealed by their expressions, holds even greater promise.

CONCLUSION

The year 1941 was a significant year in our national history. It confronted the entire nation with new problems and responsibilities. Nowhere have these been more keenly felt than in the field of public welfare. The morale of the public is dependent upon the conviction that our society and political philosophy are worth preserving, and such conviction is endangered chiefly by failure to provide either work opportunities or assistance to people in economic need. To the extent that public welfare administrators alleviate economic distress, they are fighting the battle of democracy.

The road ahead is not an easy one. Short-sighted persons will urge curtailment of public assistance programs; public welfare administrators will need to present well-ordered facts in order to keep together our structure of home and family security. New problems will emerge, such as the need for assistance to the families of interned aliens, the need for emergency assistance and service to disaster victims, the need for greater protection of low-income groups against new hazards of insecurity. As these problems emerge, they will find the structure of public welfare services stronger than ever before—far from perfect to be sure, but with personnel ready to bend every effort to answer the national challenge.

CRIME CONTROL

By JAMES V. BENNETT

DIRECTOR, BUREAU OF PRISONS, DEPARTMENT OF JUSTICE

PRISON POPULATION

The total population of the state and Federal prisons and reformatories in the United States, which had been about 180,000 on Jan. 1, 1940 and 1941, is estimated to have decreased to a slightly lower level on Jan. 1,

1942. The approximate total number of Federal prisoners in custody decreased from about 25,456 on Jan. 1, 1940 to 23,933 on Jan. 1, 1941. There was a further decrease to 23,116 on Jan. 1, 1942. The number of Federal probationers under supervision, which

had increased from 28,563 on Jan. 1, 1940 to 29,472 on Jan. 1, 1941, showed a slight decrease to 29,283 (estimated) on Jan. 1, 1942.

THE WAR AND PRISONS

The increasing momentum of the American defense program and the sudden onset of the war created several problems affecting prisons and prisoners. The old question of permitting certain classes of ex-prisoners to serve in the military forces of the country was settled by the passage of a law approved July 29, 1941. This legislation gives the Secretary of War power in "special meritorious cases" to waive the ban on the induction of ex-prisoners into military service. This is one of the most significant results of the defense program as it relates to prisoners. Concomitant with this regulation of the principle of individual treatment, the War Department, working in collaboration with the Selective Service System and the Federal Bureau of Prisons, issued regulations whereby all but certain classes of ex-prisoners were made eligible for military service. These regulations exclude those convicted of the heinous crimes of treason, murder, rape, kidnaping, arson, sodomy, or pandering; or of any crime involving sex perversion; or for any illegal dealing in narcotics or other habit-forming drugs; or those convicted more than once of any offense punishable by death or confinement for a term exceeding one year in a penitentiary or prison; or those on probation or parole unless released from supervision during the period of military service; or those previously discharged by the Army by other than an honorable discharge. This statute and its regulations officially removes the century-old barrier which prevented all ex-prisoners from entering the military service. As a result, an increasing number of former prisoners are now entering various branches of the military service. According to all reports this action has heightened the morale of those men still in prison.

Another problem raised by the war

was the treatment of the violators of the Selective Training and Service Act of 1940. During the year approximately 350 convictions for violations of this act were secured and of these 25 per cent were "conscientious objectors." A very significant step in the treatment of this type of offender was taken by executive order of the President setting forth conditions under which there would be special parole to military or non-combatant service, or to work of national importance under civilian direction. In effect, this made possible the immediate parole to military service of those who found themselves in prison because of failure to comply with some technicality of the law or the parole to work camps of those whose conscientious objections to war made it apparently impossible for them to comply with the provisions of the law.

Most interesting has been the reaction of prisoners in state and Federal institutions to the defense program and to the war. Twelve hundred prisoners at the Eastern Penitentiary contributed blood for the Red Cross blood bank. Petitions to be allowed to help in some way in this country's war efforts have been pouring in from both Federal and state prisoners. Fifteen hundred prisoners at California's big prison at Folsom and 310 prisoners at the Utah state prison have petitioned the President for a chance to fight.

PROBATION

One hundred years ago John Augustus, Boston shoemaker, first persuaded the courts to let him try to readjust a convicted criminal in the community under his supervision. This was the beginning of what we today call probation, and Boston conducted an appropriate celebration in commemoration of that event. This experiment has been so widely accepted that there is today no question but that readjustment of the offender under proper supervision in the community is proving to be the most satisfactory method of treating offenders.

There are juvenile court and juvenile probation laws in all but two states—Maine and Wyoming. Maine has a juvenile probation law but no separate juvenile court. Three new states entered the field with state-wide adult probation laws in 1941—Florida, South Carolina, and Wyoming. At the end of the year, there were adult probation laws in every state of the Union except Louisiana, Mississippi, Nevada, New Mexico, South Dakota, and Texas. However, in Colorado, adult probation is effective in only one county and in Oklahoma only in the two larger counties. In three other states there are adult probation laws but no special paid probation officers, namely, Idaho, Montana, and North Dakota. Of course there are variations in the number of probation officers and the adequacy of probation work in many of the other states, but generally speaking, aside from those mentioned, all other states have state-wide adult probation laws. Twenty states have state administered probation, that is, probation work administered under a state board with state salaried officers. In 17 of these 20 states, the administration of probation and parole is combined. For 1941, there were listed by the National Probation Association 5,366 probation officers in all states. Of these 3,975 were regular salaried officers. Of the 3,071 counties in the United States, 1,748 had adult probation services.

There are no national statistics available on the actual use of probation since the majority of states do not compile such figures. Where there is a state-wide development of probation, as for example in New York and Massachusetts, about 25 per cent of all convicted adult offenders are placed on adult probation.

PAROLE

Action in at least eight states was taken during 1941 to strengthen and extend the operation of parole. Sweeping changes were put into effect in 1941 in the Massachusetts parole law. The entire membership of the parole board was changed, and im-

provement in the administration of the parole system in that state was anticipated. Pennsylvania also passed legislation providing for a five-member parole board under the general supervision of the Superior Court and with 280 aides to be appointed under Civil Service regulations. Alabama, Florida, and South Carolina all moved to abolish the pardon and parole maladministration by putting these matters in the hands of non-partisan boards. In Maryland, parole officers selected under the merit system have been provided for each of its three major institutions. A Virginia legislative committee, Virginia being one of the only two states not having some kind of parole program in 1941, has recommended the establishment of a state-wide probation and parole system and has recommended that \$138,000 be included in the budget for the biennium 1942-44 for such a program.

YOUTH CORRECTION AUTHORITY

The most constructive proposal made during the year was that proposed by the American Law Institute in its plan to create a Youth Correction Authority to handle all offenders between juvenile court age and 25 years of age. Under this program, youthful offenders convicted of an offense would be committed to the custody of a board or authority which would determine, after a careful study and diagnosis of the case, the best type of treatment to fit the individual case. Such treatment might or might not include institutionalization; it might involve assignment to training in a non-penal type of institution or to a job in industry where skill could be acquired in the course of work; it would include careful supervision and guidance. During 1941, at least one state—California—adopted such a law and began to experiment with this new method of dealing with youthful criminals. Already the Federal Juvenile Act, which applies the same general principles to offenders 17 years of age or under, has demonstrated the practical possibilities of such a procedure.

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CRIME TRENDS

The latest official crime statistics of the Department of Justice showing the number of offenses known to the police in 345 cities with populations over 25,000 for the first nine months of 1940 and 1941 indicate a decrease

OFFENSES KNOWN TO THE POLICE: NUMBER AND RATE PER 100,000 INHABITANTS

(Jan.-Sept. 1941)¹

Offense	Number	Rate per 100,000 ²
Murder, non-negligent manslaughter.....	2,709	4.2
Manslaughter by negligence.....	1,793	2.9
Rape.....	4,610	7.2
Robbery.....	22,717	35.3
Aggravated assault.....	23,709	36.9
Burglary—breaking or entering.....	134,457	245.0
Larceny—theft.....	374,157	681.8
Auto theft.....	87,119	135.6

¹ The above figures cover 2,109 cities with a combined population of 64,267,531.

² Rates are based upon population figures, 1940 decennial census.

for robbery, burglary, and larceny, and increases for murder, manslaughter by negligence, rape, assault, and auto theft.

OFFENSES KNOWN TO THE POLICE IN CITIES WITH POPULATION OVER 25,000

(Jan.-Sept. 1940 and 1941)¹

Offense	Number		
	1940	1941	Increase or Decrease (—)
Murder and non-negligent manslaughter.....	2,094	2,259	165
Manslaughter by negligence.....	1,073	1,234	161
Rape.....	3,478	3,729	251
Robbery.....	21,526	19,876	—1,650
Aggravated assault.....	18,833	19,871	1,038
Burglary—breaking or entering.....	113,176	106,225	—6,951
Larceny—theft.....	302,300	299,221	—3,079
Auto theft.....	68,418	72,901	4,483

¹ The above figures cover 345 cities with a combined population of 49,010,650.

HOUSING

By ABNER H. FERGUSON

ADMINISTRATOR, FEDERAL HOUSING ADMINISTRATION

GENERAL

New records were established in 1941 in the number of homes built and bought under the Federal Housing Administration's Insured Mortgage System, and in the number of properties improved under Title I of the National Housing Act. Yet the year's most notable achievement for the home building industry and for the Federal Housing Administration was the concentration of effort on providing enough homes for workers in defense industry centers. The FHA was officially designated as a defense agency and did all within its powers to speed national defense.

DEFENSE HOUSING

On March 28, Congress amended the National Housing Act by creating Title VI, Defense Housing Insurance. This facilitated the participation of private capital in providing new homes for defense workers. The original insurance authorization was for \$100,000,000. By Sept. 2, the demand had become so great that Congress increased the authorization to \$300,000,000, providing insured financing for about 90,000 new defense homes. On June 28, Congress further amended the act by extending the insurance of mortgages on existing homes for three years through June, 1944, and by in-

creasing the total insurance authorization from \$4,000,000,000 to \$5,000,000,000. At the same time it extended insurance of property improvement loans under Title I for two years through June, 1943.

Further, it increased the amount of Title I loans for remodeling or modernizing dwellings designed or to be designed for two or more families from \$2,500 to \$5,000, and the maximum term from three to five years, in order to facilitate this method of providing habitable dwelling units for defense workers. Later the FHA reduced the maximum allowable charge for this type of loan (when for more than \$2,500) from \$5 to \$4 discount a year per \$100. The total authorized insurance obligation of the FHA was raised from \$100,000,000 to \$165,000,000.

Building activities were further concentrated on defense housing when the Federal Reserve Board restricted installment loans under Regulation and when the Supply Priorities and Allocation Board confined priority preference for critical building materials to projects for defense, or for public health and safety.

Although building costs advanced during 1941, the FHA continued its efforts to provide soundly constructed and attractive homes in well planned and protected neighborhoods at prices low enough to be within the reach of families with reasonable steady incomes.

When the Office of Production Management established the priorities system to conserve critical materials, the FHA became its agency in processing applications for priority preference in connection with defense housing. This activity of the FHA was kept entirely separate from its normal functions of insuring home mortgages and property improvement loans.

Efforts were made to carry out the new duties and responsibilities with the utmost economy, although the FHA had become self-supporting. In fact, Administrator Abner H. Ferguson announced that the FHA's income from insurance premium renewals on long-term mortgages has become suf-

ficient to meet operating expenses for an indefinite period, even if insurance operations should decrease in the near future.

Income for 1941 was over \$26,000,000, of which around \$13,200,000 went to operating expenses and the remainder to the various insurance reserves.

RECORD VOLUME OF INSURANCE

During 1941, the total amount of loan insurance written by the Federal Housing Administration again surpassed all previous years, totaling \$1,185,852,709 as compared with \$1,026,049,609 in 1940. The grand total of all insurance written was \$5,262,117,385 as of Dec. 31, 1941.

Under Section 203 of Title II of the National Housing Act, the FHA issued insurance during 1941 on 198,799 small-home mortgages aggregating \$876,707,284; under Section 207 of Title II, on 27 mortgages for \$12,997,841 on rental and group housing projects, providing 3,001 dwelling units; and under Title VI, on 3,778 home mortgages for \$13,431,250. In addition, a total of 687,837 loans amounting to \$282,716,234 were reported by private financial institutions for insurance under Title I. About 88 per cent of the Title I loans were for improvement of residential properties.

HOME MORTGAGE INSURANCE

Although Title VI was assuming an increasing importance as the year ended, the principal FHA activity continued to be the insurance of small-home mortgages under Section 203 of Title II covering single-family homes almost exclusively. During the year, 291,199 home mortgages totaling \$1,358,312,975 were selected for appraisal under Title II; 210,237 totaling \$938,384,435 were accepted for insurance; and 198,799 totaling \$876,707,384 were insured (became premium-paying). This compares with the 1940 record of 282,880 mortgages for \$1,271,983,776 selected; 202,281 for \$876,431,018 accepted; and 168,293 for \$736,490,344 insured. Gross business under Section 203 from 1935 through 1941 amounted to \$6,216,000,000.

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Early in the year the ratio of new homes to all mortgages accepted under Section 203 was over 80 per cent. After Title VI was established, general construction restricted, and the insurance of existing-home mortgages extended for three years, the proportion of existing-home mortgages began to increase. Mortgages insured under Section 203 are protected by the Mutual Mortgage Insurance Fund, with the debentures issued by the FHA in exchange for foreclosed properties fully and unconditionally guaranteed by the United States. As of Sept. 30, assets of the MMIF totaled \$45,307,025 and liabilities \$9,121,614, leaving net assets of \$36,185,411.

Up to Sept. 30 the FHA had taken title to 3,155 small-home properties on which mortgages insured under Section 203 had been foreclosed by the lending institutions, out of a total of 777,107 premium-paying mortgages as of that date. Of the 3,155 homes transferred to the FHA in exchange for debentures, 2,630 had been resold, resulting in a net charge of \$1,655,491 against the MMIF, less than one-twentieth of one per cent of the total amount insured. The remaining 525 properties were held awaiting sale. Incidentally, the net charge is more than offset by the amount of prepayment premiums on mortgages retired before maturity.

DEFENSE HOUSING INSURANCE

The broad objective of Title VI, Defense Housing Insurance, is maximum participation by private capital under FHA mortgage insurance in the construction of added housing facilities required for defense industry workers in areas where there is reasonable assurance of permanent need for the new dwellings after the end of the defense emergency.

Title VI operations are not designed to take care of cases where the need is for temporary facilities, or where the need for additional housing is likely to disappear with the emergency, or where workers cannot pay rent sufficient to support the investment of private funds.

Mortgages insured under Title VI

are limited to a term of 20 years and a maximum amount of \$4,000 on a single-family home, \$6,000 on a two-family dwelling, \$8,000 on a three-family dwelling, and \$10,500 on a four-family dwelling. The average amount per dwelling unit has been \$3,564.

Under Title VI, builders are enabled to obtain mortgage loans up to 90 per cent of the FHA valuation of the houses they build for sale or rent, provided they are in defense areas specified by the President. The insurance premium is $\frac{3}{4}$ of 1 per cent on outstanding balances until the owner-occupant becomes the mortgagor, at which time it is reduced to $\frac{1}{2}$ of 1 per cent. Only owner-occupants of new single-family homes may obtain 90 per cent mortgages under Title II.

A Defense Housing Insurance Fund was established with an initial allocation of \$10,000,000 from the Reconstruction Finance Corporation and is being built up through insurance premiums, fees, and income from investments as are the other FHA insurance funds. As of Sept. 30, the Fund's assets totaled \$10,032,093 and liabilities \$5,000,000 (unallocated funds receivable from the Reconstruction Finance Corporation), leaving net assets of \$5,032,093. Title VI has been in operation only since April, 1941, with no claims filed against the fund as of Sept. 30.

From April through December, 1941, 48,617 defense housing mortgages totaling \$180,113,632 were selected for appraisal; 40,793 for \$146,413,340 were accepted for insurance, and 3,778 for \$13,431,250 were insured and became premium-paying after completion of the houses.

TITLE I LOANS IN 1941

New records were established in 1941, both in the number and amount of loans reported by financial institutions for insurance under Title I of the National Housing Act, after this type of FHA insurance was extended by Congress for two years. With the restriction of practically all new construction to defense, or public health and safety, the great modernization and repair market became all the

more important to builders not in defective areas.

In 1941, a total of 687,837 loans for \$282,716,234 was reported for insurance under Title I, bringing the grand total from July, 1934 through December, 1941 to 3,697,061 loans for \$1,525,675,496. This compares with the previous record volume of 662,948 loans for \$276,541,365 reported in 1940. The average loan in 1941 was \$417, compared with \$420 in 1940. The Federal Reserve Board Regulation W, restricting consumer installment credit generally to 18 months, issued in the fall of 1940, was not reflected in Title I loans until toward the end of the year. Such loans do not have to be reported by the lending institutions until 30 days after the money is advanced.

Most of the Title I loans were for improvement of dwelling properties. The ratios of all Title I loans reported for insurance by types of property improved were: Single-family homes, 74.8 per cent of the number of all loans and 67.6 per cent of the amount of all loans; dwellings for two or more families, 12.9 of the number and 16.5 per cent of the amount; farm homes and other farm structures, 4.6 and 4.4 per cent; commercial and industrial properties, 4.2 and 7.5 per cent; and all other types, 3.5 and 4 per cent.

Ratios by type of improvement for which the major portion of the loan were to be used were: new construction, 3.7 per cent of the number and 11.6 per cent of the amount of all loans reported; additions and alterations, 13.2 and 17.7 per cent; exterior painting, 17.4 and 17.6 per cent; interior finish, 6.4 per cent for both; roofing, 14 and 8.1 per cent; plumbing, 8.8 and 8.3 per cent; heating, 27.5 and 22.9 per cent; miscellaneous, 9 and 7.4 per cent.

Since June, 1939 a premium has been charged on the outstanding bal-

ances of all loans insured under Title I, $\frac{3}{4}$ of 1 per cent on property improvement loans and $\frac{1}{2}$ of 1 per cent on new-home loans. As of Sept. 30, 1941, Title I accrued income totaled \$2,959,239, with unliquidated obligations of \$7,447, leaving an excess of resources over liabilities of \$2,951,792.

Claim paid for losses on loans insured under Title I as of Sept. 30, totaled \$36,216,090. The FHA had collected in cash and recoveries on these claims the sum of \$8,132,398, leaving an uncollected balance of \$28,083,682. By working directly with the original borrowers, the FHA expects to reduce further the uncollected balance of these claims.

RENTAL AND GROUP HOUSING

Activities in the group and rental housing field under the restricted Section 207 and the repealed Section 210 continued in decreased volume in 1941. Under these two sections, 27 mortgages amounting to \$12,997,841 became premium-paying in 1941, financing projects which provided 3,001 new dwelling units, compared with 48 mortgages totaling \$13,017,000 in 1940, providing 4,100 dwelling units.

As of Dec. 31, 1941, premium-paying rental and group housing mortgages numbered 344 and amounted to \$139,950,516, and firm commitments were outstanding to insure 15 other mortgages amounting to \$9,369,000. The number of dwelling units provided by the 359 projects totaled 39,549.

As of Sept. 30, the FHA had taken title to 14 projects on which it had insured mortgages, and one mortgage note had been assigned to it. One project (nine small houses) had been sold. The other projects are being operated under FHA supervision pending their resale, with the expectation that their liquidation will be accomplished with little or no loss.

LOW-RENT PUBLIC HOUSING

By NATHAN STRAUS

ADMINISTRATOR, UNITED STATES HOUSING AUTHORITY

GENERAL

The decentralized slum clearance and low-rent housing program administered by the USHA is in its fourth year of operation, and it may be said that, for the first time in this country, slums are being eliminated and replaced more rapidly than they are being created. Abolition of America's slums, long the cherished dream of social philosophers and public-spirited citizens, is becoming a reality. Furthermore, it has been proven that the task of building housing for low-income families could best be entrusted to the initiative, enterprise, and control of local public bodies—that they needed only the Federal Government's technical and financial assistance to attack the problem.

LOCAL HOUSING AUTHORITIES

On July 1, 1941, 623 housing authorities representing rural and urban communities of all sizes throughout the country were established in the United States, 106 of them in the first six months of 1941. Only five of the nation's 30 largest cities of over 300,000 population are without housing authorities. By far the greatest number of local authorities are functioning in communities with less than 25,000 population. Thirty-nine states, the District of Columbia, Puerto Rico, Hawaii, and Alaska have passed legislation permitting the establishment of local housing authorities and participation in the public housing program. Wherever these laws have been tested in the highest courts in their respective states, they have been unanimously upheld. Only nine states remain to pass enabling legislation.

PROGRESS IN HOUSING PROJECTS

By June 30, 1941, 587 low-rent public housing projects were under loan contract in 276 rural and urban com-

munities. Of these, 399 projects were under construction or completed. The loan contracts for all projects totaled \$721,275,000. Into the 230 projects having dwelling units open for occupancy, 68,791 low-income families had moved from their former slum environment. When the present program is finished, 193,000 families will be living in USHA projects. A start has been made down the road pointed by the United States Public Health Service when it stated: "The elimination of slum districts and the provision of housing which meets sanitary requirements would have an immeasurable effect on the future health of the population."

All of this rehousing is being accomplished through the local housing authorities of cities, towns, and rural areas upon whom rests the responsibility for initiating, planning, constructing, and managing the low-rent public housing projects. The United States Housing Authority is providing aid in the form of construction loans and annual grants-in-aid or contributions to help achieve very low rents. But these Federal loans are being matched in increasing measure by local loans, and these Federal grants-in-aid are being matched by local subsidies, generally in the form of tax exemption.

DEFENSE HOUSING

The significance of the weapon which has been forged through local responsibility has clearly emerged during the defense emergency. The response of the USHA-local authority machinery to the need for housing defense workers was prompt and efficient. Within 125 days of the passage of Public Law 671, Title II of which authorized the USHA to use its funds for defense housing, projects in Pensacola, Fla., and Montgomery, Ala., were open for occupancy by de-

LOW-RENT PUBLIC HOUSING

fense workers. On June 30, 1941, 20 defense housing projects were under loan contract, all of them under construction or completed; funds for four projects had been allocated to the Army or Navy, of which two were being tenanted; and of the 61 projects assigned to USHA under the Lanham Act, three had dwelling units open for occupancy.

As important as the provision of needed defense housing, is the question of what to do with that defense housing when the emergency is over and the United States has returned to a peace-time economy. While every effort is being bent to the needs of the defense emergency, the future and the spectre of "ghost towns," are not forgotten. It is planned to convert USHA-built defense housing to the rehousing of families from the slums at the end of the emergency. At the same time, an equivalent number of slum dwellings would be closed up or put out of use or demolished, in accordance with the provisions of the United States Housing Act. This would mean, in effect, that the community would exchange bad housing for an equal amount of good housing.

RENTS IN RELATION TO INCOMES

The families of the nation may be divided into three income groups. In rural areas the lowest third of all families have incomes of less than \$800 per year; in urban areas the lowest third have incomes of less than \$1,200 per year. If the theory be accepted that families should pay at least 20 per cent of their income for rent, the families in the income group under \$800 should be paying something over \$13 per month, and the families in the income group under \$1,200, \$20 per month.

Actual rents in USHA-assisted projects are lower than these figures. Approved rent schedules for 207 projects throughout the country, as of June 30, 1941, show average shelter rents of \$10.48 per family per month in the South, and \$14.73 per family per month in the North. The average rent for the country per family

per month was \$12.79. Average monthly shelter rent plus utilities per dwelling unit was \$21.10 in the North and \$14.28 in the South, with the average for the country \$17.98. It is anticipated (as of June 30, 1941) that average annual family incomes in USHA projects in the North will be \$929, and in the South \$700, with the average for the country \$824.

The basic requirements of tenant eligibility set up in the United States Housing Act are as follows: Only families in the lowest income group may be admitted to USHA-assisted projects. No family is eligible for admission to a project if its net income is more than five times the cost of rent plus utilities in the project, except in the case of families with three or more children in which case the income may be as much as six times the rent plus utilities. USHA project rents are staying well within these statutory maxima. In many communities where housing shortages exist or have been intensified by the influx of defense workers, the rents paid for USHA-built homes are below those charged for substandard housing.

A development started in 1940, that is, grading rents in projects according to income and family size as well as according to the size and desirability of the dwelling unit, was continued and its coverage widened in 1941. At the end of June, 1940, only 6 per cent of the housing developments with approved rent schedules had more than one rent and income grade, and by June 30, 1941, 62 per cent of the developments had graded rents.

COST REDUCTION IN CONSTRUCTION

One of the main accomplishments of the public housing program is its record of construction cost reduction. This has been achieved in the face of rising trends in both labor and material costs. Built by labor paid prevailing wages, following normal industrial relationships in the particular community, the USHA-local authority projects are simple and durable permanent structures. Every project combines specific service to

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the individual families rehoused with vast general services to the whole community, by way of slum reclamation, stimulus to surrounding private areas, incentive to private construction, elevation of general standards of home design, and reduction of the excessive economic and social toll of the slums in terms of crime and disease and delinquency. But through every thought for the welfare of those to be rehoused there runs the hard fact that the funds available must go as far as possible and be spent in the most economical fashion in the public interest.

On the 399 projects completed or under construction by June 30, 1941, the average net construction cost per dwelling unit was only \$2,720. This figure is \$42 under that for the previous year for USHA, and about 25 per cent lower than the net construction cost of housing undertaken by private enterprise in the same communities.

The average dwelling facilities cost per unit under the USHA program to the end of the 1941 fiscal year was \$3,695 in cities of over 500,000 population (where the statutory maximum is \$5,000) and \$3,191 in cities under 500,000 population (where the statutory maximum is \$4,000). It is notable that these costs have been achieved without sacrifice of basic USHA standards.

Every local authority can no doubt point to economies in planning and construction which have contributed to the lowered costs. Their constant vigilance and cooperation with USHA have been factors in the savings. But the major economies achieved under the USHA program may be attributed to intelligent planning, new methods of construction, prudent land-acquisition practices, elimination of frills and gadgets, large-scale purchasing, standardization of parts and equipment, competitive bidding practices, and the lower interest rates made possible by the development of short-term financing. Successful labor relations have also played their part in the lowered costs, avoiding costly stoppages during construction.

The lowered costs achieved by local authorities and the USHA have resulted in a considerable saving to the Federal Governments in the only item which constitutes its expenditures in the public housing program; that is, the subsidies which bring rents within the means of low-income families.

Insurance rates on USHA projects have been cut to about half the normal domestic rate, due to their negligible fire risk. These savings in costs, together with savings in utilities costs, have lowered subsidies to a point where it may be conservatively stated that the total cost to the Government of rehousing a family is \$75 a year. It is a small cost indeed for improved family health and morale.

In part designed to take up the slack in employment dating from 1929, it was estimated that the housing program would provide about 110,500 "man years" of employment on the site for building trades workers, and an additional 165,000 "man years" of labor off the site in the manufacture of building materials, and necessary administrative, architectural and engineering functions.

MEANS AND METHODS OF FINANCING

All of the labor and materials and services necessary to build the project is channeled through private enterprise. Funds for the projects are loaned by private bankers; private owners sell their land to the local authorities; construction bids are let to private contractors; materials are bought from private manufacturers; the myriad services to the project, engineering, architectural, research, and clerical, are all drawn from regular channels of employment and are employed by local housing authorities. The local Government initiates the project; the work is accomplished through the regular routine of everyday life.

Furthermore, reports made by field representatives of the Bureau of Labor Statistics of the Department of Labor show that marked stimulation of private construction follows the

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building of public housing projects. Four investigations to determine the extent of building activity in project neighborhoods have already been completed in Phoenix, Ariz.; Milwaukee, Wis.; Cleveland, O.; and Mobile, Ala. In every case, the reports show that both residential construction in the neighborhoods of projects has increased, and that repairs and improvements to nearby residences have also been increased.

HOUSING NEEDS

Actual inspection of nearly 10,000,000 dwellings in 419 localities between 1934 and 1940 showed 2,875,430, or 28.9 per cent, in bad condition. The first results of the 1940 Housing Census for eight states showed 36.7 of the urban dwellings reported in need of major repairs and without private baths. Testimony recorded in the hearings of the Temporary National Economic Committee and before the

Defense Housing Coordinator in Washington revealed an acute shortage of housing both for civilian and defense needs. The whole job of supplying the more than 13,000,000 non-farm homes which will be needed in this country by 1950 (see *Introduction to Housing*, by Dr. Edith Elmer Wood, Washington, 1940) is too big to be attempted through private enterprise alone or through public action alone. It will need the combined efforts of both to accomplish a well-rounded program to rehouse the ill-housed one-third of the nation.

Toward this end achievements of the housing program have justified faith in its essential value to the people of this nation. And the energy which has contributed toward those achievements—the elimination of slums which for so long have blighted great areas of cities and towns in all sections of the country—has been supplied by the people themselves.

PERIODICAL PUBLICATIONS

American Childhood

74 Park Ave., Springfield, Mass.

American Journal of Public Health and the Nation's Health

1790 Broadway, New York City.

American Journal of Psychiatry

9 Rockefeller Plaza, New York City.

Boy's Life

Boy Scouts of America, 2 Park Ave., New York City.

Journal of Home Economics

Mills Bldg., Washington, D.C.

Journal of Social Hygiene

1790 Broadway, New York City.

Social Research

66 West 12th Street, New York City.

Social Studies

1021 Filbert Street, Philadelphia.

Social Work Today

112 East 19th Street, New York City.

COGNATE SOCIETIES AND RESEARCH INSTITUTIONS

(For further information, the reader may address the following organizations)

JUSTICE AND MAINTENANCE OF ORDER

AMERICAN BAR ASSN., 1140 N. Dearborn St., Chicago, Ill.

AMERICAN CIVIL LIBERTIES UNION, 31 Union Sq., New York City.

AMERICAN COUNCIL OF LEARNED SOCIETIES, 597 Fifth Ave., New York City.

AMERICAN INSTITUTE OF CRIMINAL LAW AND CRIMINOLOGY, 357 E. Chicago Ave., Chicago, Ill.

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AMERICAN LAW INSTITUTE, 3400 Chestnut St., Philadelphia, Pa.
 AMERICAN PRISON ASSN. OF N.Y., 135 E. 15th St., New York City.
 NATIONAL COMMITTEE ON PRISONS AND PRISON LABOR, 1860 Broadway, New York City.
 NATIONAL CRIME COMMISSION, 73 Tremont St., Boston, Mass.
 NATIONAL POLICE CONFERENCE, 240 Centre St., New York City.
 NATIONAL PROBATION ASSN., 50 W. 50th St., New York City.
 NATIONAL SOCIETY OF PENAL INFORMATION INC., 114 E. 30th St., New York City.
 SOCIETY FOR THE PREVENTION OF CRIME, 150 Broadway, New York City.
 WOMEN'S PRISON ASSN., 110 Second Ave., New York City.

SOCIAL ORGANIZATIONS

AMERICAN ACADEMY OF POLITICAL AND SOCIAL SCIENCE, 3457 Walnut St., Philadelphia, Pa.
 AMERICAN POLITICAL SCIENCE ASSOCIATION, 305 Harris Hall, Northwestern University, Evanston, Ill.
 AMERICAN RED CROSS, 17th between D and E Sts., N.W., Washington, D.C.
 AMERICAN SEAMEN'S FRIEND SOCIETY, THE, 550 W. 20th St., New York City.
 AMERICAN SOCIETY FOR THE PREVENTION OF CRUELTY TO ANIMALS, 50 Madison Ave., New York City.
 BOY'S CLUBS OF AMERICA, INC., 381 Fourth Ave., New York City.
 BOY SCOUTS OF AMERICA, 2 Park Ave., New York City.
 CAMP FIRE CLUB OF AMERICA, 50 Union Square, New York City.
 CHILDREN'S AID SOCIETY, 105 E. 22nd St., New York City.
 FEDERAL COUNCIL OF THE CHURCHES OF CHRIST IN AMERICA—Commission on the Church and Social Service, 297 Fourth Ave., New York City.
 GIRLS' FRIENDLY SOCIETY OF THE U.S.A., 386 Fourth Ave., New York City.
 GIRLS' SERVICE LEAGUE OF AMERICA, 138 E. 19th St., New York City.

HUMANE SOCIETY OF NEW YORK, 313 E. 58th St., New York City.
 NATIONAL CATHOLIC WELFARE CONFERENCE, 1312 Massachusetts Ave., N.W., Washington, D.C.
 NATIONAL SOCIAL WORK COUNCIL, 50 W. 50th St., New York City.
 YOUNG MEN'S CHRISTIAN ASSN., International Committee, 215 W. 23rd St., New York City.
 YOUNG WOMEN'S CHRISTIAN ASSOCIATION, 600 Lexington Ave., New York City.

SOCIAL FRATERNITIES

BENEVOLENT AND PROTECTIVE ORDER OF ELKS OF THE U.S.A., 2750 Lake View Ave., Chicago, Ill.
 INTERNATIONAL ASSN. OF LIONS CLUBS, 332 S. Michigan Ave., Chicago, Ill.
 KIWANIS INTERNATIONAL, 520 N. Michigan Ave., Chicago, Ill.
 KNIGHTS OF COLUMBUS, P.O. Drawer 1670, New Haven, Conn.
 KNIGHTS OF THE KU KLUX KLAN, INC., 55 Roswell Rd., Atlanta, Ga.
 KNIGHTS OF PYTHIAS, 1054 Security Bldg., Minneapolis, Minn.
 LOYAL ORDER OF MOOSE, Mooseheart, Ill. (Supreme Lodge of the World).
 MODERN WOODMEN OF AMERICA, 1504 Third Ave., Rock Island, Ill.
 ROTARY INTERNATIONAL, 35 E. Wacker Drive, Chicago, Ill.
 SOVEREIGN GRAND LODGE OF THE INDEPENDENT ORDER OF ODD FELLOWS, 16 W. Chase St., Baltimore, Md.
 SUPREME COUNCIL OF THE ROYAL ARCANUM, 407 Shawmut Ave., Boston, Mass.
 SUPREME COUNCIL, 33° ANCIENT & ACCEPTED SCOTTISH RITE.—Northern Jurisdiction, 117 Statler Bldg., Boston, Mass.—Southern Jurisdiction, 1733 16th St., N.W., Washington, D.C.
 WOODMEN OF THE WORLD, 1447 Tremont Pl., Denver, Col.

(SOCIAL) HOME LIFE

COMMUNITY SERVICE SOCIETY OF NEW YORK, 105 E. 22nd St., New York City.
 LANDLORDS' CO-OPERATIVE ASSN., 18 E. 41st St., New York City.
 NATIONAL HOUSING ASSN., 105 E. 22nd St., New York City.

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BIG BROTHER MOVEMENT, INC., 315 Fourth Ave., New York City.

CAMP FIRE GIRLS, INC., 88 Lexington Ave., New York City.

CHILD CONSERVATION LEAGUE OF AMERICA, 318 W. Washington St., Chicago, Ill.

CHILD WELFARE LEAGUE OF AMERICA, 130 E. 22nd St., New York City.

CHILDREN'S AID SOCIETY, 105 E. 22nd St., New York City.

COMMITTEE ON WORLD FRIENDSHIP AMONG CHILDREN, 297 Fourth Ave., New York City.

HEBREW SHELTERING AND IMMIGRANT AID SOCIETY, 425 Lafayette St., New York City.

NATIONAL CHILD LABOR COMMITTEE, 419 Fourth Ave., New York City.

NATIONAL CHILD WELFARE ASSN., 70 Fifth Ave., New York City.

(SOCIAL) HEALTH

AMERICAN ASSN. OF SOCIAL WORKERS, 130 E. 22nd St., New York City.

AMERICAN CHILD HEALTH ASSN., 50 West 50th St., New York City.

AMERICAN FOUNDATION FOR THE BLIND, INC., 15 West 16th St., New York City.

AMERICAN HUMANE ASSN., 50 Madison Ave., New York City.

AMERICAN MISSION TO LEPERS INC., 156 Fifth Ave., New York City.

AMERICAN SOCIAL HYGIENE ASSN., INC., 50 W. 50th St., New York City.

ANTI-PROFANITY LEAGUE, Ware, Mass.

ASSOCIATION FOR RESEARCH IN HUMAN HEREDITY, Cold Springs, L. I., N. Y.

BETTER FILMS, NATIONAL COUNCIL, 70 Fifth Ave., New York City.

BIRTH CONTROL FEDERATION OF AMERICA, 501 Madison Ave., New York City.

COMMUNITY SERVICE SOCIETY OF NEW YORK, 105 E. 22nd St., New York City.

NATIONAL COMMITTEE FOR MENTAL

HYGIENE, 50 West 50th St., New York City.

NATIONAL HEALTH COUNCIL, 50 West 50th St., New York City.

NATIONAL HOUSING ASSN., 105 E. 22nd St., New York City.

NATIONAL RECREATION ASSN., 315 Fourth Ave., New York City.

NATIONAL SAVE-A-LIFE LEAGUE, INC., 299 Madison Ave., New York City.

NEW YORK SOCIETY FOR THE SUPPRESSION OF VICE, 215 W. 22nd St., New York City.

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(SOCIAL) TEMPERANCE

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NATIONAL TEMPERANCE SOCIETY, 287 Fourth Ave., New York City.

WORLD NARCOTIC DEFENCE ASSN., 578 Madison Ave., New York City.

FOUNDATIONS

CARNEGIE ENDOWMENT FOR INTERNATIONAL PEACE, 405 West 117th St., New York City.

CARNEGIE FOUNDATION, 522 Fifth Ave., New York City.

CARNEGIE HERO FUND COMMISSION, 2307 Oliver Bldg., Pittsburgh, Pa.

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MORO EDUCATIONAL FOUNDATION, 475 Fifth Ave., New York City.

ROCKEFELLER FOUNDATION, 49 W. 49th St., New York City.

ROCKEFELLER INSTITUTE FOR MEDICAL RESEARCH, York Ave. and 66th St., New York City.

ROOSEVELT MEMORIAL ASSN., 28 E. 20th St., New York City.

RUSSELL SAGE FOUNDATION, 130 E. 22nd St., New York City.

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WOODROW WILSON FOUNDATION, 8 W.
40th St., New York City.

WOMEN'S WORK AND PROGRESS

AMERICAN ASSN. OF UNIVERSITY
WOMEN, 1634 I St., N.W., Wash-
ington, D.C.

AMERICAN NURSES ASSN., 50 W. 50th
St., New York City.

AMERICAN WOMEN'S ASSN., 353 W.
57th St., New York City.

GENERAL FEDERATION OF WOMEN'S
CLUBS, 1734 N St., N.W., Washing-
ton, D.C.

GIRLS SERVICE LEAGUE OF AMERICA,
138 East 19th St., New York City.

NATIONAL AMERICAN WOMAN SUF-
FRAGE ASSN., Grand Central Termi-
nal, New York City.

NATIONAL ASSOCIATION OF WOMEN
PAINTERS AND SCULPTORS, 42 W. 57th
St., New York City.

NATIONAL COUNCIL OF WOMEN OF THE

U.S. INC., 501 Madison Ave., New
York City.

NATIONAL FEDERATION OF BUSINESS
AND PROFESSIONAL WOMEN'S CLUBS,
1819 Broadway, New York City.

NATIONAL LEAGUE OF WOMEN VOTERS,
726 Jackson Place, N.W., Washing-
ton, D.C.

NATIONAL WOMAN'S CHRISTIAN TEM-
PERANCE UNION, 1730 Chicago Ave.,
Evanston, Ill.

PROFESSIONAL WOMAN'S LEAGUE,
Broadway and 73rd St., New York
City.

QUOTA CLUB INTERNATIONAL, INC., 1204
18th St., N.W., Washington, D.C.

WOMEN'S EDUCATIONAL AND INDUS-
TRIAL UNION, 264 Boylston St., Bos-
ton, Mass.

WOMEN'S ROOSEVELT MEMORIAL ASSN.,
Roosevelt House, 28 E. 20th St.,
New York City.

WOMEN'S TRADE UNION LEAGUE, 247
Lexington Ave., New York City.

DIVISION XVI

LABOR AND LABOR LEGISLATION

LABOR CONDITIONS AND LEGISLATION

BY WITT BOWDEN
BUREAU OF LABOR STATISTICS, DEPARTMENT OF LABOR

GENERAL

The year 1941 brought essential unity to labor in agreement with the President's Labor Day pronouncement that "no group has a greater stake in the defeat of Nazism, in the preservation of the fundamental freedoms, in the continuance of democracy throughout the world." Before the attack by Japan on Dec. 7, there remained in labor circles a small minority who insisted on avoidance of American participation in the war. This minority, in agreement with a prominent group in Congress and in the country at large, held that the national emergency had been over-emphasized, that normal peace-time procedures, including the exercise of the right to strike, need not be interrupted. This attitude, described by the phrase "strikes as usual," was comparable to the point of view of many business men in seeking to maintain "business as usual." The Japanese attack completed the already advanced process of unification on basic national issues.

The expansion of war industries in 1941 was accompanied by an unprecedentedly rapid increase in employment, a large-scale migration of workers, a shifting of occupational and industrial connections, and a lengthening of hours of work. The rise in wages in manufacturing and mining was somewhat greater than the increase in cost of living, but in many of the centers of war production the inadequacy of housing and

community facilities more than counteracted the advantages of higher earnings. The rise in prices was frequently attributed to higher wages, but was mainly a result of other factors. Wholesale prices increased more rapidly than retail prices, and the largest increases in wholesale prices applied to types of goods least affected by wage increases.

Industrial disputes increased as in other periods of expanding employment and rising cost of living, but toward the end of the year, even before the outbreak of war, strikes became negligible, especially in war industries. Inter-union conflicts and occasional resort to strikes for settling jurisdictional disputes aroused much opposition to unions. The American Federation of Labor and the Congress of Industrial Organizations, nevertheless, were able to increase their membership and to extend the areas of their collective agreements.

Industrial relations and public views regarding the need for restrictions on the right to strike were vitally affected by the outbreak of war. This event hastened an agreement, already under consideration, to avoid all work stoppages, to settle all disputes by peaceful means, and to accept as final the awards of a war labor board to be created by the President.

There was little labor legislation of major importance in 1941, either state or Federal. The Supreme Court upheld the Fair Labor Standards Act and rendered decisions which, on the

whole, strengthened the National Labor Relations Board.

The International Labor Organization, with wartime headquarters in Montreal, renewed its activities. At a special conference in New York City, attended by delegations from 35 countries, plans were formulated for active participation in post-war reconstruction.

WAR AND THE LABOR SUPPLY

The most pressing labor problem in the decade before the outbreak of war in Europe was unemployment. America's role in the war as the "arsenal of democracy," even before formal declaration of war, caused a shift of emphasis from the finding of jobs for workers to the finding of workers for the war industries.

There was a general consciousness of the irony of the role of war in reducing unemployment. It was widely emphasized, however, in labor circles, that the war demand was ephemeral and abnormal; that the survival of free unions, free associations, and democratic procedure required the diversion of energies into war effort; and that the post-war resumption of attacks on such problems as unemployment would call for an extension, not a curtailment, of democratic procedure.

FORECASTING LABOR NEEDS AND THE LABOR SUPPLY

An intelligent program of expansion of industry for the production of war materials called for advance estimates of labor requirements, by industry, by occupation, and by locality, and for information regarding the available supply of workers. The Bureau of Labor Statistics of the Department of Labor, which had made extensive studies of labor productivity and of the labor requirements under Public Works Administration contracts, was called upon to estimate the needs for labor under the new program. Efforts were made to answer the questions: "How many of what kind of workers will be needed? Where and when?" Special studies of labor requirements

were made from time to time to meet particular situations, especially those created by the construction of Army housing and camp facilities, the enlarged shipbuilding and aircraft programs, and the acute need for machine tools.

The United States Employment Service obtained detailed information regarding the available supply of workers through its regular employment registration service and through a special nation-wide registration of workers at state employment offices. (After Dec. 31, these offices were operated by the Federal Government.) The special registration was undertaken in March 1941. The registrants were classified by occupational skill and experience, with particular reference to the occupations most in demand in war industries. It was found that about 1,000,000 among the 5,000,000 unemployed persons were suited, on the basis of their work histories, for skilled jobs. These extensive records were immediately made available to employers. Labor unions cooperated with the Labor Division of the Office of Production Management, which had general charge of the mobilization of manpower, by appraising the abilities of their members, both employed and unemployed, in the light of shortages of skilled labor.

MOVEMENT OF WORKERS INTO WAR INDUSTRIES

The estimated number of wage-earners and salaried persons employed in non-agricultural establishments (excluding military and naval forces, self-employed, casual workers, and domestic servants) rose from 31,385,000 in November 1940 to 34,550,000 in November 1941. In contrast, there was a slight decline in the estimated number of hired farm workers. The average of the estimates for Oct. 1 and Nov. 1, 1940 was 2,907,000, and the average a year later was 2,814,000. The armed forces of the United States increased from 822,000 in November 1940 to 2,071,000 in November 1941.

The outstanding change in employ-

ment was in the group of manufacturing industries most closely associated with war production. In 18 of these industries combined, there was an increase of 69 per cent between June 1940 and October 1941, in contrast to an increase of only 31 per cent in manufacturing as a whole.

In one state (Louisiana) employment was smaller in November 1941 than in November 1940; and in two states (Florida and Utah), the increases were less than 1 per cent. Increases exceeding 15 per cent occurred in Maryland, Missouri, Alabama, Washington, Oregon, and California.

Remarkable contrasts in the regional impact of the war on employment are shown by estimates of changes in employment in 77 metropolitan areas. In six of these areas (El Paso, Tex., Flint, Mich., Grand Rapids, Mich., Lowell, Mass., Richmond, Va., and Scranton, Pa.), the increases in employment between October 1940 and October 1941 were less than 5 per cent. In five of these areas (Los Angeles, Portland, Ore., San Diego, Calif., Seattle, Wash., and Wichita, Kan.), the increases were more than 50 per cent, the largest increase being 96.4 per cent in Wichita, Kan. In many areas, especially in the East, a rapid expansion of employment had already occurred before October 1940. Many new centers of war production and of military activity were created outside of the metropolitan areas.

The Employment Service's monthly inventory of essential occupations showed a steady decrease during most of the year. In October, for the first time in six months, there was a slight increase (about 2 per cent) in the number of workers available for jobs in war industries. Shortages still existed, however, in many key occupations, especially in shipbuilding, aircraft, and ordnance industries. Thus, on the West Coast, it was found that there were less than 10,000 fully qualified workers available through the employment offices to fill 60,000 expected job openings in war industries.

TAPPING LABOR RESERVES

The Bureau of Labor Statistics' estimates of the number of non-agricultural workers (including the self-employed) rose from 35,881,000 in June 1940 to 40,693,000 in November 1941, an increase of almost 5,000,000. The estimated increase between November 1940 and November 1941 was more than 3,000,000. The additional workers in non-agricultural employments came only in part from the ranks of the unemployed. A large proportion came from agriculture, from casual employments, and from groups of the population not normally employed.

Large numbers of workers on the rolls of emergency employment agencies were transferred to war industries. This process was facilitated by a W.P.A. employment register which listed from the rolls of that agency 151,000 experienced mechanics and other industrial production workers of the types for which there was special demand in war industries; 154,000 partly skilled workers who could quickly be trained; and an additional 31,000 who were undergoing training in war-industry occupations.

The Bureau of Employment Security of the Social Security Board, in an effort to enlist the aid of women, made a study of 1,894 different occupations required in 21 key industries. The study indicated that only 331 of the types of jobs analyzed were definitely unsuitable for women. It was estimated in September 1941 that 30,000 women were at work in arms and ammunition plants alone and that they were being hired in large numbers in aircraft, radio, electrical-instrument, and small-parts industries.

As early as February 1941, the Social Security Board announced that each month about 2,500 retired workers receiving old-age benefits were temporarily surrendering their benefits and returning to work. The Board also reported a decline in the rate of applications for old-age benefits. Age limitations for civil service examinations were made less exacting, and the War and Navy Departments

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were permitted by law to call back retired employees. There was an effort made to overcome the opposition to the employment of older workers, and the employment offices joined with local organizations in a concerted effort to find employment for men over 40. The effort was designed particularly to recruit men experienced in such highly important fields as airplane manufacturing, shipbuilding, and tool and die making.

The employment of Negroes in national defense was promoted by the establishment, on April 12, 1941, of the Negro Employment and Training Branch of the Labor Division of the OPM. The main national labor organizations agreed to cooperate in efforts to remove union restrictions against colored workers in defense industries. The Committee on Fair Employment Practices was formed for carrying into effect the general policy of preventing discrimination because of race in the hiring of workers.

TRAINING WORKERS FOR WAR INDUSTRIES

The long period of depression beginning in 1929 caused a decline in apprenticeship; and widespread unemployment, combining with rapid technological change, caused a serious obsolescence of skills. Many of the war industries had been comparatively inactive in recent years, and the number of their skilled workers had declined sharply. These industries, when called upon to meet war requirements, needed many highly skilled workers for retooling and the adaptation of plants to new types of work as well as for production work in the plants. In addition, new plants had to be constructed, and the new plants called in turn for workers to make the necessary machine tools, machinery, and equipment.

The training program was undertaken in 1940 and greatly extended in 1941. The program included arrangements, under the supervision of the Office of Education, for using vocational schools; a similar plan for intensive training in engineering schools; training within industry; the

expansion of the work of the Federal Committee on Apprenticeship of the Department of Labor; and the adaptation of the Employment Service to the work of recruiting trainees and placing them in suitable jobs.

In the 18 months from July 1940 to December 1941, about 2,500,000 persons received special instruction for war work in 1,200 public vocational and trade schools, 155 colleges and universities, and 10,000 public school shops. More than 2,000,000 workers in war contract plants received in-plant training. Several hundred thousand young persons on the National Youth Administration and Civilian Conservation Corps rolls completed defense training courses and most of them were given opportunity for work experience useful in war industries.

It was agreed on March 8, 1941, by the heads of the Office of Education and the Employment Service, that the latter agency should recommend to cooperating schools the numbers to be trained and the occupations in which training should be offered. Proposals to establish defense training in particular occupations were to be submitted to advisory committees established by state and local authorities in charge of vocational training, the committees to include in their voting membership equal representation by labor and management.

On Feb. 4, 1941, the nation-wide inauguration of the training-within-industry program was announced. The country was divided into 22 districts, each with a district representative and an advisory council of four—one A. F. of L. and one C.I.O. representative and two representatives of management. In each district there was also formed a panel of experts available to war industry plants for installing training programs.

In December, the Labor Division of the OPM reorganized and expanded its facilities for handling problems of training workers. The new organization included a labor supply policy committee of 12 with equal representation from labor and management.

LABOR CONDITIONS AND LEGISLATION

The Federal Committee on Apprenticeship of the Department of Labor expanded the number of apprenticeship systems that are serviced by the Committee to about 2,600. Most of these systems are carried on by joint apprenticeship committees representing both management and labor. The Federal Committee, in cooperation with the Labor Division of the OPM, supervised the apprenticeship phases of the training-within-industry program and rendered extensive technical assistance to companies engaged on war contracts.

LABOR ORGANIZATIONS AND THE TRAINING PROGRAM

Both major groups of labor organizations criticized the training program as lacking coordination and adequate representation of workers. The Executive Council of the A. F. of L. stated that all advisory committees on vocational training should consist of an equal number of representatives of labor, employers, and the public. The Council asserted that vocational education, either as pre-vocational work in the schools or as apprenticeship training in the shops, "is of vital importance to unions because it determines training of future members and control over entrance into occupations. Maintenance of craft and production standards can not be assured without union participation in training." The Council recommended that the work of the Federal Committee on Apprenticeship of the Department of Labor be expanded and that this agency be directed to draft "national standards for all short-time training for the guidance of all local undertakings."

The report of the president of the C.I.O. also emphasized the importance of the full collaboration of unions, employers, and public authorities in the planning and carrying out of training programs. "No training program should go forward without the fullest participation of labor in its planning and operation," and this principle, it was asserted, should apply alike to training within plants and to the program as a whole. A second

principle called for a training program "closely related to production plans," and it was asserted that extensive training programs not so related "are dangerous to labor standards and to the morale of the workers who are trained."

ECONOMIES IN THE USE OF LABOR

A plan announced on Nov. 21, 1941 called for the intensive training of 200,000 supervisors and "lead men." This was an extension of the training-within-industry program, which had been designed in part for economizing existing skilled labor resources and in part for training additional workers. This program called for upgrading to free the most highly skilled workers from the performance of operations which could be handled by persons with lesser skill. It also called for the breaking down of the more complex operations into their simplest components and for the performance of these simplified operations by less experienced workers already on the job or given employment at these jobs after short, intensive training.

The skilled labor requirements in war industries were analyzed by the OPM. as a guide for officials in administering the selective service system. Arrangements were made for the release of certain classes of men already inducted into military service. These men were transferred to an enlisted reserve as occupational specialists.

Economies in the use of labor were stimulated by the continuance of research programs both public and private. The OPM. recognized the importance of industrial research by issuing on Nov. 15 a preference rating on scarce items needed by laboratories. The building of new plants and the remodeling of existing establishments made possible the introduction on an unprecedented scale of the latest improvements and techniques.

Increased production was accompanied by the more complete utilization of productive capacity and a resulting reduction in overhead labor

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per unit of output. The expansion of output also made possible the more general use of large-scale mass-production methods, especially in relatively new industries such as aircraft. One plant's use of a powered final assembly line reduced the over-all time of this division of the plant by 50 per cent and led to the overhauling of the production schedule of the entire plant. In another establishment, improved conveyor systems trebled production of a major item and yet required an increase of only 70 per cent in employment and 30 per cent in working space. Other important technological changes, either newly introduced or adapted to the needs of war industries, are welding, improved methods of heat treatment, metal spraying, powder metallurgy (the process of blending powdered metals and eliminating most of the usual steps in metalworking), specialization of tools, job simplification, and improved inspection methods (for example, by the use of X-rays). These changes are highly significant in their long-term post-war effects on labor and the national productive capacity as well as in their bearing on the wartime utilization of the labor supply.

HOURS OF WORK

An outstanding change has been the economizing of labor by elimination of part time and increase in overtime. There was a sharp increase in hours of work in 1941, but in many of the war industries hours had already been materially extended. Thus, in blast furnaces, steel works, and rolling mills, average weekly hours rose from 33.6 per week in June 1939 to 38.8 in October 1940; in machine tools, from 42.4 to 49.1; in foundry and machine-shop products, from 38.7 to 42.1; in aircraft, from 42 to 44.3; and in shipbuilding, from 38.5 to 41.7.

Between October 1940 and October 1941, the average number of hours per week continued to increase. The rise in durable-goods industries as a whole was 4.8 per cent. Many of the non-durable-goods industries were affected by war contracts and urgent demands for increased output, with resulting

sharp increases in hours. In the men's clothing industry, for example, between October 1940 and October 1941, hours increased 11.1 per cent; in boots and shoes, 11.3 per cent; and in canning and preserving, 8.1 per cent. In bituminous-coal mining, the rise was 17.2 per cent, and in anthracite mining, 39.9 per cent. Part time in coal mining had been exceptionally high.

Under the Fair Labor Standards Act, hours of work payable at straight-time rates were limited after October 1940 to 40 hours per week. The figures previously mentioned are not the scheduled hours of individual workers but the average hours of all workers who were on the payrolls during any part of a given payroll period. The high turnover rates resulting from the shifting of workers and the additions to payrolls in war industries checked the rise in average hours worked.

Special surveys by the Bureau of Labor Statistics showed that as early as March 1941 most of the plants in key defense industries were operating more than one shift per day. There was, however, in most of the plants one main shift employing nearly three-fourths of the wage earners. Almost two-thirds of the wage earners were then working overtime, with an average of 10 hours per week per overtime worker. A later survey covering a payroll period in June 1941 indicated that in one-shift plants about half of the wage earners were working overtime, the average amount of overtime per overtime worker being 8.7 hours per week. In two-shift plants, 83 per cent of the wage-earners were working overtime, the average amount of overtime per overtime worker being 13.2 hours per week. In three-shift plants, almost half of the wage-earners were working overtime, and the average amount of overtime per overtime worker was 8.6 hours per week.

OVERTIME RATES AND LABOR COST

The Fair Labor Standards Act requires the payment of time and a half for time above 40 hours per week.

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Union agreements, with few exceptions, call for premium rates for overtime, and when work is not regularly scheduled on a 7-day basis, Saturday and Sunday work is subject in most of the union agreements to rates higher than straight-time rates. Some union agreements also provide for differentials in favor of shifts other than the regular day shift.

The large increase in overtime gave rise to questions as to the effects of overtime rates on labor cost, especially in work carried on under public contracts. A study of 260 corporations in 26 war industries, made by the Bureau of Labor Statistics, indicated that higher rates paid for overtime do not raise unit labor costs or call for higher prices or for indemnification of defense contractors who were asked to adopt longer hours. Profits tend to rise with increased production under longer hours even when overtime rates are paid to workers. The cost of overtime is more than counterbalanced by the increased utilization of plant facilities and the absorption of fixed overhead expenses in a larger volume of production.

WAGE INDUCEMENTS IN WAR INDUSTRIES

When the reorganization of the national economy on a war-production basis was begun in the summer of 1940, there was a large surplus of labor, but much of it was located in areas other than those of the expanding war industries. In addition, the demands of these industries for skilled labor soon exhausted the supply of many types of skills. At the same time, many other industries expanded because of the rise in the level of income and the demand for goods and services. In totalitarian countries, governments controlled the movements of workers, the allocation of labor, and the amount of compensation without consulting the workers. In a democratic country, the manning of the war industries was naturally accomplished by making employment in these industries relatively attractive.

Workers in war industries must expect to find employment elsewhere

after the emergency, and the temporary and unstable nature of their employment calls for compensating inducements. In addition, many workers in war industries are subjected to the disadvantages of transfer to areas where housing, community facilities, prices, and other living conditions are comparatively unfavorable.

RISE IN HOURLY EARNINGS

The year 1941 was marked by a rise in hourly earnings. In manufacturing industries as a whole, average hourly earnings in October 1941 were 77 cents, or 14.7 per cent higher than in October 1940. The rise was most marked between March and October. In terms of money earnings adjusted by the cost-of-living index, the average was only 5 per cent higher in October 1941 than in the same month of 1940. In all of the non-manufacturing industries for which hourly earnings figures are available, average hourly earnings increased with the exception of the telephone and telegraph industry, in which there was a decline of about 1 per cent. In most of the non-manufacturing industries the rise in hourly earnings was smaller than in manufacturing. A rough general average computed for all industries for which hourly earnings data are available indicates a rise of somewhat more than 10 per cent, slightly in excess of the rise of 9.2 per cent in cost of living. In a significant number of industries, both in manufacturing and non-manufacturing employments, the rise in money earnings was more than counterbalanced by the rise in cost of living.

The rise in average hourly earnings between October 1940 and October 1941 in the durable-goods industries was 15.5 per cent, and in the non-durable-goods industries, only 11.8 per cent. In the latter group, most of the outstanding increases were in the textile industries (spinning and weaving), in canning and preserving, and in rubber products, which were affected vitally, either directly or indirectly, by war contracts. The largest increases in the non-manufacturing group were in the mining industries

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and in railroad transportation, these also being subject to special war-time demands for labor.

CAUSES OF THE RISE IN WAGES

The increased demand for labor and the rise in wages in war industries indirectly affected wages in other industries, but various circumstances contributed to the rise in average hourly earnings. Increases in straight-time rates of pay were embodied in many collective agreements. Few of these were industry-wide, but notable exceptions were the agreements in bituminous-coal mining, anthracite mining, and railroad transportation. Wage rates were affected in several industries by the prevailing-wage determinations under the Public Contracts Act, which became increasingly important with the expansion of war-time contracts.

The last general change in the minimum wage under the Fair Labor Standards Act was the rise from 25 cents to 30 cents an hour, effective Oct. 24, 1939. The law also provided for the establishment of a minimum wage of 40 cents by Oct. 24, 1945, increases in the interval to be made in the form of wage orders applying to selected industries.

It was estimated that, up to the middle of 1941, wage orders had increased the rates of pay of approximately 800,000 workers. Industries covered in 1941, either by initial wage orders or by orders which raised the minimum rates, included railroad transportation, motor transportation, textiles (a general minimum of 37.5 cents), wool (a minimum of 40 cents), lumber and timber products, women's apparel and various branches of apparel manufacturing, shoes, converted paper products, rubber products, wood furniture, gray-iron jobbing foundries, drugs, medicines, and toilet preparations, jewelry, and some minor industries. In several industries, the 40-cent minimum authorized by the law was established for the first time. These changes raised the wages of large numbers of relatively low-paid workers but had much less effect on the general levels of average hourly

earnings than the union agreements previously mentioned.

The rise in the level of average hourly earnings was only in part a result of increases in straight-time rates of pay. One factor was the increased employment in high-wage industries. When more workers are added to the pay rolls in high-wage industries than in low-wage industries, the average rises even though there is no change in the rate structure. In manufacturing as a whole, the number of workers in October 1941 was 18.7 per cent greater than in October 1940. The increase was predominantly in such high-wage industries as foundry and machine-shop products, with a rise of 38 per cent; electrical machinery, apparatus, and supplies, 46 per cent; aircraft, 122 per cent; and shipbuilding, 145 per cent.

The general rise in average hourly earnings was partly a result of the increase in the amount of overtime, previously mentioned. Increased overtime resulted in part from longer hours and in part from the reduction, under the Fair Labor Standards Act, in the number of weekly hours payable at straight-time rates from 42 to 40 hours, effective Oct. 24, 1940.

WAGES IN RELATION TO COSTS AND PROFITS

The all-commodities index of wholesale prices was 17.4 per cent higher in October 1941 than in October 1940; the index of manufactured products was 14.4 per cent higher; semi-manufactured articles, 13.2 per cent; and raw materials, 25.6 per cent. The rise in average hourly earnings in all manufacturing was 14.7 per cent, and in most of the non-manufacturing industries, much smaller. A given percentage rise in average hourly earnings results in approximately the same percentage rise in the amount of wages paid per unit of output unless there is a change in output per man-hour; but wages are only a part of production costs—in some industries not more than 10 per cent, in others as much as 60 per cent. When wages are 40 per cent of production costs, a rise of 15 per cent in wages paid per

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unit gives a wage-cost basis for a rise of only 6 per cent in prices.

The general increase of 17.4 per cent in wholesale prices between October 1940 and October 1941 indicates the predominance of factors other than wage costs. Hourly earnings increased less than wholesale prices, and the effect of the rise in hourly earnings on unit cost was counteracted in whole or in part in many industries by increases in man-hour output. Furthermore, the increases in wholesale prices were largest in fields of production least affected by wage costs.

In the raw-materials index, farm products have chief weight. The wholesale-price index of farm products rose 35.5 per cent from October 1940 to October 1941. Farm wages do not have major importance in agricultural production costs. The rates of wages on farms are comparatively low, and only one out of every four workers is a hired laborer. A major commodity, other than farm products, entering into the raw-materials index is crude petroleum. The wholesale price of Oklahoma-Kansas crude petroleum rose 15.5 per cent between October 1940 and October 1941; the price of California crude, 28.3 per cent; and the price of Pennsylvania crude, 48.7 per cent. In contrast, average hourly earnings in the crude-petroleum industry rose only 10.5 per cent, and, more significantly, the amount of wages paid per unit of crude petroleum produced was actually somewhat lower in October 1941 than in October 1940.

WAGE EARNERS' INCOME IN RELATION TO CONSUMPTION AND PRICES

The sharp upturn in wholesale prices in 1941 was caused mainly by circumstances other than the changes in production costs attributable to changes in wage rates and in hourly earnings. The main factors were the rising demand for goods required by war industries, the rising costs of certain types of materials, and the curtailment of supplies, especially of certain imports, due to war conditions.

The rise in the demand for some

types of goods was accelerated by the increase in the income of wage earners. The increase in wage earner income, however, was caused mainly not by higher rates of pay but by the larger number of workers employed and by longer hours of work. Increases in the incomes of individual wage earners are reflected in average weekly earnings, a composite of hourly earnings and hours of work.

RISE IN WEEKLY EARNINGS

In manufacturing industries, average weekly earnings were 20.6 per cent larger in October 1941 than in October 1940. In both anthracite mining and bituminous-coal mining, the increases, both in amounts and in percentages, were larger than in manufacturing as a whole. In all of the other non-manufacturing industries, however, the percentage increases were smaller. The weighted average wage rate of hired farm workers rose 28 per cent. In all of the employments for which information is available, the combined average rose approximately 17 per cent.

Cost of living was 9.2 per cent higher in October 1941 than in October 1940, and in consequence there were declines in real weekly earnings in most of the non-manufacturing industries and in several of the separate manufacturing industries. The general level of weekly earnings adjusted by the cost-of-living index was approximately 7 per cent higher in October 1941 than in October 1940.

RISE IN LABOR INCOME AND CONSUMPTION

Income payments as a whole rose from \$6,812,000,000 in October 1940 to \$8,262,000,000 in October 1941, an increase of 21.3 per cent. Salaries and wages combined rose from \$4,397,000,000 to \$5,386,000,000, an increase of 22.5 per cent. In manufacturing industries, which felt in exceptional degree the impact of the national defense program, payrolls (excluding salaries) rose 43.5 per cent. The main cause of the rise in labor income was the increase in employment from about 35,000,000 in October 1940 to

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39,700,000 in October 1941. Social-security benefits declined, reflecting improved employment conditions.

Increases in forms of income other than wages and salaries were especially marked in the fields of entrepreneurial income (including that of farmers) and rents and royalties. The aggregate of these forms of income rose 30.1 per cent from October 1940 to October 1941, as compared to a rise of 22.5 per cent in wages and salaries combined.

The increase in consumer income was counteracted in part by the rise in cost of living. There was, nevertheless, a large increase in the purchasing power of wage earners and farmers, who spend most of their income for current consumption. Wages and salaries totaled \$40,337,000,000 in the first 10 months of 1940, and \$48,980,000,000 in the first 10 months of 1941, an increase of 21.4 per cent. Entrepreneurial income, consisting mainly of the income of farmers, rose from \$11,814,000,000 in the first 10 months of 1940 to \$13,651,000,000 in the first 10 months of 1941, an increase of 15.5 per cent. All retail sales amounted to \$36,834,000,000 in the first 10 months of 1940, and there was an increase of 18.4 per cent to \$43,626,000,000 in the first 10 months of 1941.

The rise in retail sales was accelerated by the desire to make purchases in advance of new taxes, limitations on the supply of certain articles (for example, automobiles), and an expected rise in prices. There was evidence before the end of the year of a slackening in the rate of consumption. The New York Federal Reserve Bank's index of distribution to consumers was 17.3 per cent higher in August 1941 than in August 1940, only 4.2 per cent higher in September 1941 than in September 1940, and slightly lower in October 1941 than in October 1940.

This indication of the slowing up of consumption toward the end of the year was supported by the evidence of retail sales. Aggregate dollar sales in September 1941 were 21 per cent higher than in September 1940; in October 1941, only 12 per cent higher

than in October 1940; and in November 1941, only 10 per cent higher than in November 1940, an increase in dollar sales which was substantially counteracted by the rise in cost of living.

EFFECTS OF THE WAR ON CONSUMPTION

When war broke out in September 1939, there was a large number of unemployed workers, including many skilled workers, and there was a large amount of slack in the utilization of plant facilities. This situation continued after the inauguration of the national defense program in the summer of 1940, and it was, therefore, possible to increase the production of goods and services for current consumption without interfering with the production of defense requirements. The intensification of defense activity, however, even before the outbreak of war on Dec. 7, 1941, had created shortages of some kinds of labor and material and plant facilities, and it had become apparent that the increased requirements for production under the Lease-Lend program would ultimately call for curtailments of consumption of many articles, especially those requiring skills and materials needed for defense production. In recognition of these circumstances, curtailments of production of automobiles and certain other articles had already been ordered before the outbreak of war. The entry of the United States into the war led to plans for the use of about half of the country's production for war and advanced the date of rigorous measures for preventing current consumption from interfering with the war effort.

Before the outbreak of war in December, there was no lack of labor or of materials or of plant facilities in the aggregate, but there was danger of serious shortages of certain essential or bottle-neck skills, plant facilities, and materials. The shortage of materials was accentuated by the increased hazards of shipping, especially in the Pacific. The necessity for expanding plant facilities was a major cause of shortages alike of labor and

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of materials. The number of projects for plant expansion approved from June 1940 to the end of September 1941 was 3,004, the estimated total cost amounting to \$5,260,000,000.

The vast expansion of plant facilities and of war production called for one of two alternatives. One was the curtailing of consumption through price increases and deflation of the purchasing power of income. The other was the control of consumption by direct measures, such as priorities and allocations, taxation and savings, limitations on profits and wages and other forms of income, and price controls.

MEASURES FOR CONTROLLING CONSUMPTION

A system of priorities was early adopted and gradually extended to include the rationing of some essential articles. This method of limiting consumption applied to such articles as automobiles, tires, household equipment, and in general goods containing materials required for defense and affected by shortages, actual or foreseeable.

New taxation did not affect to a significant extent the expenditures for consumption made in 1941. The new Federal taxes were designed, however, to curtail sharply in 1942 the expenditures of persons with low and medium incomes. Income-tax exemptions were reduced for married persons from \$2,000 to \$1,500, and for single persons from \$800 to \$750. In addition to the existing tax rate of 4 per cent, a surtax rate of 6 per cent was levied on net incomes up to \$2,000. The new excise taxes also were designed to limit the consumption of many articles of daily use, although bearing most heavily on luxuries, semi-luxuries, and durable consumption goods such as automobiles and household appliances.

Voluntary savings greatly increased, especially after the outbreak of war. There was discussion of compulsory savings in various forms, and the House of Representatives passed a bill for increasing the retirement de-

duction of Federal employees from 3.5 per cent to 5 per cent.

In large areas of employment, wages were stabilized by collective agreements. Special stabilization agreements were made for shipbuilding and the building trades. Price controls were undertaken primarily for preventing increases in the wholesale prices of basic materials that enter into the production of war goods. It was particularly desired to prevent the pyramiding of price increases by producers and dealers who make use of the materials at different stages of fabrication and sale.

It was recognized that wages form a large part of production costs, and proposals were made for legislation to prevent further wage increases. These proposals were rejected. It was held that limitations on prices are in themselves also limitations on wages because employers naturally will not raise wages beyond the range of profits as limited by price controls. Furthermore, wages were already widely restricted by collective agreements and wage-stabilization agreements. A general limitation on wage changes was also viewed as interfering with needed adjustments in the wage structure for attracting workers from non-essential industries into war industries and for raising the income of workers whose living standards are so low as to impair their efficiency.

CHANGES IN COST OF LIVING

The Bureau of Labor Statistics' index of cost of living underwent little change during the first year and a half of war, but in March 1941 a sharp upturn began. In November 1941, the general index was 10.1 per cent higher than in November 1940, and 8.9 per cent higher than in March 1941.

The rise affected the major items entering into the cost of living in radically different degrees. Between November 1940 and November 1941, the rise in the cost of food was 17.9 per cent; clothing, 12.6 per cent; rent, 3.1 per cent; fuel, electricity, and ice, 3.7 per cent; house furnishings, 15.1 per cent; and miscellaneous items, 5.3 per cent.

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A particularly serious problem was the increased cost of housing, especially for low-cost and medium-priced houses in areas of intensified production. Studies by the Bureau of Labor Statistics show that when rents were raised they were usually advanced by the same dollar amounts on homes at various rent levels. Thus, an increase of \$5 on a house renting for \$25 was a rise of 20 per cent in contrast to an increase of only 10 per cent when the rental of a house renting for \$50 was increased by the same amount. Increases in rents bore unevenly upon tenants in another way. A rise in the price of an article of food is general and is borne alike by all purchasers of the article, but increases in rents are usually restricted to a limited number of houses. Even when homes for which rents remained unchanged or declined are included with homes for which rents were raised, the total rental bill in many cities rose as much as 10 per cent after October 1939. The increases on the houses affected were usually larger than 10 per cent. Thus, in Mobile, Ala., between Sept. 15, 1939 and Sept. 15, 1941, there were increases on 52 per cent of all rented homes, and the average of the increases on homes occupied by whites was 17.1 per cent and by Negroes, 21.4 per cent. In many small towns where defense industries were centered, the increases in rents were much larger.

LABOR MIGRATION

Before the outbreak of war in December, the chairman of the House Committee for Investigating Defense Migration stated that the defense boom towns had already attracted more than 2,000,000 people in addition to the normal movement of workers, and he stated that the total would probably reach 4,000,000. It was reported that more than 60,000 persons had migrated to Bridgeport, Conn. in quest of defense jobs. The population of San Diego, Calif. would be increased, it was estimated, by 100,000 by the spring of 1942. In Portland, Ore., there was an influx of 20,000 persons. Charleston, Ind.

grew in a few weeks from 800 to 18,000 in population. Burlington, Ia. increased in size from 27,000 to nearly 50,000. The increase in population in some of the smaller communities near Army cantonments ranged from 300 to 1,000 per cent in the space of a few months. A large proportion of the added population in these areas consisted of construction workers temporarily required for the building of cantonments.

HOUSING, HEALTH, AND RELATED PROBLEMS

The House Committee for Investigating Defense Migration found that local communities were unable to meet the suddenly expanded needs for educational, recreational, and community facilities. The Committee estimated that private builders could not be induced to build houses for rent at rates within reach of about 80 per cent of the defense workers. On Jan. 11, 1941, the Division of Coordination of National Defense Housing was created in the Office of Emergency Management. On Sept. 3, 1941, the Office of Defense Health and Welfare Services was created to take the place of an earlier agency serving the same purpose.

The housing program covered four main types of work. One was the registration of vacant houses and rooms and utilization of existing facilities. A second was a study of the extent of need for additional facilities and the making of estimates of the amount of housing which public agencies, as distinguished from private enterprise, would be called upon to provide. A third was the planning and construction of houses. A fourth was the management of properties, including the formulation of policies for fixing rentals and selecting tenants.

On Dec. 24, it was announced that, up to Dec. 20, Federal funds had been allotted for 129,154 defense homes and that 106,352 of these had been completed or were being built. The number of such homes completed totaled 62,444. The number of dormitory units for single defense workers had reached 6,678. The number of FHA-

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inspected privately-financed homes, which had gone into construction since January 1941, totaled 210,521.

Early in 1941 estimates were made of the extent and cost of special community facilities needed under the program of production for war purposes. The estimates included school buildings and equipment, transportation facilities for school children, the operation of these facilities for the first school year, water supply and sewage facilities, milk-pasteurization plants, mosquito control, hospitals and clinics, and recreation facilities. On June 30, 1941, Congress passed the Community Facilities Bill, appropriating \$150,000,000. The program called for the utilization as far as possible of existing state and local agencies.

The conditions of production in rapidly expanding war industries added to the difficulties of preventing accidents. The estimated total number of man-hours lost through accidents in 1940 was 1,870,720,000. Preliminary figures for the first six months of 1941 indicate an increase in accidents significantly greater than the increase in employment.

Special measures for the prevention of accidents were undertaken by the National Committee for the Conservation of Man-Power in Defense Industries, appointed in 1940 by the Secretary of Labor, with representation from employers, labor organizations, and government. One of its main activities in 1941 was the working out of a program for defense training in safety engineering. Under this program, thousands of supervisors and key men were given training in safety standards and methods.

DISPLACEMENT OF WORKERS IN CIVILIAN INDUSTRIES

The allocation and rationing of materials affected adversely an increasing number of industries. Notable among these were the industries producing automobiles, hardware, refrigerators, household equipment, and textiles. Employment in the silk industry and in the industries making

use of silk was seriously reduced by the cutting off of imports in July 1941, and the serious curtailment of imports after the outbreak of war on Dec. 7 affected employment in other industries, particularly those making use of rubber and tin. The shifting of productive energies into war-production channels did not seriously reduce aggregate employment in civilian industries in 1941, but the curtailment of consumption was apparent late in the year from the statistics, given above, of retail trade and distribution to consumers.

The nature of the problem of displacement of civilian workers and the methods undertaken to handle the problem are illustrated by the so-called Buffalo plan. The closing down of a large automobile plant in Buffalo as a result of reduced automobile production displaced 3,600 workers. Arrangements were made for the immediate reemployment of some of the displaced workers in war-industry plants in the Buffalo area. Schools in the area undertook the task of retraining the displaced workers. It was estimated that about three-fourths of these workers would require some retraining for periods ranging from three to five weeks, during which the trainees received unemployment compensation. In the work of retraining and transfer, representatives of the unions and of employers cooperated with Federal officials and local school authorities. During the transitional period, the plant that had employed the workers was undergoing conversion for airplane-engine production. The Buffalo plan served as an example for a national policy for the prompt registration, reemployment, and, whenever necessary, the retraining of displaced workers.

The program of contract distribution was designed to facilitate the war use of establishments throughout the country, especially smaller plants. Field offices and exhibits were established and exhibit trains were sent to various parts of the country to inform manufacturers regarding the nature of the products required and the necessary adaptations of their plants.

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WORK OF AGENCIES FOR EMERGENCY EMPLOYMENT

The increased opportunities for employment were reflected in the reduced rolls of the emergency employment agencies. The number of W.P.A. workers fell from 1,819,000 in November 1940 to 1,056,000 in November 1941. In the latter month, 324,000 W.P.A. workers were engaged in activities directly connected with the national defense program. The number on the rolls of the National Youth Administration fell from 708,000 in November 1940 to 650,000 in November 1941. The number of Civilian Conservation Corps workers fell from 321,000 in November 1940 to 171,000 in November 1941. These agencies, and particularly the National Youth Administration, adapted their programs for the training of workers for war industries.

The large increase in the demand for workers and the actual shortage of workers in many occupations and industries raised questions regarding the continuance of large numbers on the rolls of the emergency employment agencies. There remained, however, a large number of unemployed workers, the shortages being in skilled occupations in a limited number of industries. Many areas were little affected by the expansion of these industries. Even in the areas of greatest expansion, much temporary unemployment resulted from the shutting down of plants engaged in the production of goods for civilian consumption. Even in the communities of greatest concentration of war production, many workers without special skills were unable to find employment, partly because these centers attracted more workers than the expanding industries could employ.

The emergency employment agencies adapted their activities rapidly to meet the new conditions. The W.P.A., the N.Y.A., and the C.C.C. collaborated with the Office of Education and other agencies responsible for the training of war workers. The W.P.A. curtailed or abandoned many of its

normal projects and rapidly expended such projects as the construction of airports, military structures, roads of military importance, and community facilities in areas of war industries. Thus, as early as August 1941, a program was developed for the nationwide establishment of recreation centers beyond the capacity of local communities.

From 1936 to 1940, 8,500,000 different persons at one time or another worked on W.P.A. projects, which the President described as "the greatest peacetime effort ever undertaken by any bureau or department of the Government." The W.P.A., by its maintenance of living standards and work experience in years of large-scale unemployment, contributed vitally to the country's preparation for the war effort. The adaptation of its work to the new needs transformed it from "the Nation's front-line defense against unemployment" to "one of the most important forces in the second-line trenches of the Nation's defense of democracy."

SPECIAL PROBLEMS OF LABOR IN WAR TIME

Shortages of materials and plant facilities, the rapid expansion of war production toward the end of 1941, and the projected expansion in 1942 made it apparent that there would be a diminishing proportion of the national product available for current consumption. A major problem, therefore, was the adoption of policies designed to bear least heavily on workers with small incomes, whose standards of living could not safely be lowered even from the point of view of maximum efficiency in the war effort.

Another problem accentuated by war conditions was the maintenance of the legal rights of labor, especially in the field of organization and collective bargaining, without resort to methods that would interfere with the productive process or that would antagonize the public. The special difficulties confronting labor were sug-

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gested by a statement made by the associate director of the Office of Production Management: "The mere fact that a picket line is more dramatic than a decision by a board of directors does not relieve us of the obligation of clear and fair analysis."

War conditions imposed an increasingly serious limitation on the right to strike, which labor normally holds in reserve for use when necessary to obtain recognition and the right to bargain collectively with employers. Public opposition to work stoppages arose in part, however, from resort to strikes for settling inter-union, factional, and jurisdictional disputes. These internal difficulties were intensified by the job shifts, disturbances of craft distinctions, and other adjustments made necessary by the war. They were partly incidental to the recent rapid growth of unions.

LABOR ORGANIZATIONS

Most of the labor organizations of the country continued their affiliations with either the A.F. of L. or the C.I.O. The outstanding exceptions were the so-called big four railway brotherhoods (engineers, firemen, conductors, and trainmen), the International Typographical Union, National Federation of Telephone Workers, and National Federation of Federal Employees. The 1941 A.F. of L. convention suspended the Brewery Workers International Union.

Relations between unions and public authorities as employers were brought to the attention of the public in the controversy between the Transport Workers Union and the City of New York in connection with the taking over by the municipality of parts of the city's transport system. Questions at issue were made the subject of litigation in the courts, notably the status of collective agreements between the union and their former private employers when the transport system was taken over by the city. An outstanding example of mutually satisfactory arrangements between unions and public authorities remained the plan worked out earlier by the Tennessee Valley Authority.

THE AMERICAN FEDERATION OF LABOR

The American Federation of Labor, which held its annual convention in Seattle Oct. 6-16, reported a further expansion of membership in 1941. The Federation consists of 106 national and international unions and more than 1,400 local and Federal labor unions chartered directly by the Federation. Paid-up membership was reported as totaling about 4,570,000. The increase during the year was about 312,000, the machinists' international accounting for about 32,000 new members. There were 10 international unions with at least 100,000 members, the largest membership (408,300) being that of the teamsters' union.

Jurisdictional disputes remained a major problem of the Federation. Resolutions were adopted to refer to the executive council the disputes between the International Association of Machinists and the United Brotherhood of Carpenters and Joiners and between the International Association of Machinists and the Amalgamated Association of Street and Electric Railway Employees. A dispute between the International Brotherhood of Teamsters and the Brewery Workers International Union regarding jurisdiction over drivers employed in breweries led to a vote by the 1941 convention suspending the brewery workers' union.

A change in the constitution of the Federation reduced the monthly per capita tax. The number of vice presidents was reduced from 15 to 13. The executive council, composed of the president, the vice presidents, and the secretary-treasurer, was thus reduced from 17 to 15 members. The convention unanimously reelected the president, William Green, the secretary-treasurer, and all but one of the 13 vice presidents.

THE CONGRESS OF INDUSTRIAL ORGANIZATIONS

The 1941 convention of the Congress of Industrial Organizations was held in Detroit Nov. 17-22. It was there stated that the approximate

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membership was 5,000,000 and that the increase since the preceding convention was between 900,000 and 1,000,000 members. It was reported that there were six unions with more than 200,000 members. The structure of the affiliated unions is, in general, along industrial rather than craft lines, and the membership of C.I.O. unions is, therefore, usually larger than the membership of A.F. of L. unions. There were 41 national and international unions and organizing committees and 236 local industrial unions operating under direct authority of the C.I.O. The president, Philip Murray, the secretary-treasurer, and the six vice presidents were unanimously reelected. Each of the 41 national and international unions and organizing committees chose a representative to serve with the president, the secretary-treasurer, and the six vice presidents as the executive board of the C.I.O.

The C.I.O., like the A.F. of L., gave vigorous support to the country's foreign policy, opposed legislative proposals for restricting the right to strike, and demanded more effective labor representation in the handling of industrial problems affecting labor. The C.I.O. convention approved the Murray Industry Council Plan for joint representation in major war industries, including local industry councils and a coordinating national board of review.

EXTENSION OF COLLECTIVE BARGAINING

Most of the collective agreements expiring in 1941 were replaced by new agreements. The renewals usually incorporated some increases in wages. Progress was made toward more explicit arrangements for handling grievances, and many unions obtained "union security" clauses or similar provisions for strengthening their position as the bargaining agents in dealing with employers.

Collective bargaining was extended in several important areas of employment. An outstanding extension was the agreement with the Ford Motor Co., signed June 20, 1941. This

agreement provided for a union shop and check-off and virtually completed the unionization of the automobile industry. About 25,000 aviation workers came under the provisions of union agreements during the year, and the conversion of automobile plants to war production was usually accompanied by provisions for the continuance of collective bargaining. A national agreement was negotiated with the Westinghouse Electric and Manufacturing Co., covering 55,000 employees. On the basis of National Labor Relations Board awards and court decisions affecting "Little Steel" companies, elections were held and negotiations were initiated for written collective agreements. Progress was made in collective bargaining in several other fields, notably among office workers. Organizational work was carried on extensively in the South, and many new agreements were made in that region.

TREND OF INDUSTRIAL DISPUTES

In 1941, as in other periods of expanding employment and rising cost of living, disputes between employers and workers increased. The number of strikes during the first 10 months of 1941, according to preliminary estimates, was 3,800. These strikes involved about 2,150,000 workers and the number of man-days of idleness was approximately 21,000,000. These figures show increases over the numbers for the corresponding period of 1940 and also over the averages for the five-year period 1935-39, although not over 1937. Preliminary information for the last two months of the year showed a sharp decline in strike activity.

Special tabulations of data relating to strikes of significance to the national defense program indicate that, from June 1, 1940, to Oct. 1, 1941, the man-days lost to production in defense industries amounted to about one-tenth of the total man-days of idleness resulting from all strikes. It may be assumed, however, that some of the strikes in non-defense industries had indirect effects on war in-

dustries. The number of workers involved in strikes in war industries during the week ended Oct. 25 was 13,900. In the week ended Dec. 6, immediately preceding the outbreak of war, only one such strike was recorded, and the number of workers involved was only 90. During the rest of the month, strike activity in war industries was negligible.

CAUSES OF STRIKES

Bureau of Labor Statistics' data on causes of strikes covering the first eight months of 1941 show that more than 50 per cent of all workers on strike were mainly concerned with wages and hours, wage questions predominating. More than a third of all workers on strike were primarily concerned with questions of union organization such as recognition of the union, discrimination against union members, strengthening of the bargaining position of the union, and the union shop. Strikes involving about 5 per cent of all workers on strike were over union or factional rivalries and jurisdictional questions.

Aside from wage questions, the issue that probably attracted most attention was the union shop or a related issue such as "union security" or the "maintenance of membership" clause in agreements, as in the Federal Shipbuilding and Drydock Company strike, the Allis-Chalmers strike, and the strikes in the captive coal mines. The first two of these resulted in the taking over and temporary operation of the plants by the Federal Government, as did the strike of employees of North American Aviation, Inc.

Widespread opposition to strikes was aroused by resort to the strike method for the settlement of jurisdictional disputes and internal controversies, as the sporadic walkouts of welders in protest against having to pay dues to more than one union and the four-day strike in August of Detroit street railway workers. Strikes of this nature involved a comparatively small proportion of workers but called forth a serious demand for restrictive legislation.

STRIKES OF MINERS

The largest amount of idleness caused by strikes in 1941 was in coal mining. More than 300,000 bituminous-coal miners were on strike during April, and brief shut-downs occurred in September, October, and November in the captive mines, owned largely by steel companies. In addition, about 90,000 anthracite workers were on strike for one day in May over the renewal of the wage agreement and about 25,000 stopped work for a time in September because of dissatisfaction with union dues. The basic importance of coal, as well as the bearing of the labor disputes in the industry on broad problems of industrial relations, calls for some analysis of the strikes of miners.

Efforts by the Department of Labor, the President, and the National Defense Mediation Board in the bituminous-coal dispute brought about by the end of April a tentative settlement, later worked out in detail, for basic increases of \$1 per day for day workers, 12 cents per ton for tonnage workers, and 15 per cent for yardage and dead work. A 10-day vacation period with vacation pay of \$20 was granted to regular employees. The Southern Appalachian operators on July 5 yielded to the demand for the elimination of the basic day-rate differential of 40 cents in their favor in the 1939 agreement, but tonnage differentials remained.

The Appalachian agreement, which covered only the commercial mines, included a union-shop clause under which workers, after they had been employed and had begun to work, must become members of the union. This clause differs from the closed-shop arrangement in the fact that under the closed shop only workers who are already members of the union may be considered for employment. The Appalachian agreement also vested exclusively in the operator the management of mines, the direction of the working force, the right to hire, and the right to discharge workers. Correlative to the union-shop clause was a no-strike clause, including the

right of employers to penalize workers who might violate the clause.

These union-shop and no-strike provisions of the Appalachian agreement were accompanied by a provision that, if terms more favorable to the operators were accepted by the union in its negotiations with the owners of captive mines, these more favorable terms would prevail in the commercial mines. Upon the failure of negotiations for extending the agreement to the captive mines, the union called a strike in these mines.

The interest of the public in the maintenance of uninterrupted production led to official action and reference of the dispute to the National Defense Mediation Board. The Board in its recommendations of Nov. 11 asserted that "it is hard to think of a reason why the individual should persist in refusing to join the union," and that "it would seem to be the part of wisdom for the operators involved in this dispute to accept the offer of the United Mine Workers." The Board decided, however, not to make a formal recommendation for the extension of the union-shop, no-strike agreement to the captive mines, and the operators continued to refuse the union's offer.

Further conferences led, however, to an agreement to accept the award of a special Board of Arbitration. This Board, which was appointed by the President on Nov. 22, rendered an award on Dec. 7 by a vote of 2-to-1 to the effect that the operators should accept the terms of the Appalachian agreement. The award was made on the following grounds: The union shop is admittedly a fair subject of collective bargaining; an admittedly legal incident of collective bargaining is the right of resort to stoppage of work; in view of the abnormal conditions and in recognition of the public welfare, the parties at interest agreed to forego this legal resort and to settle the dispute by arbitration; the arbitration thus became not a coercive proceeding and not a determination of national labor policy but an incident of collective bargaining in the bituminous-coal industry; in this

industry the prevailing arrangements include the union shop, and admittedly about 95 per cent of the workers even in the captive mines are union members; therefore, the maintenance of the *status quo* calls for the acceptance of the union shop by the minority.

THE RAILWAY WAGE CONTROVERSY

An industrial controversy of major importance was the dispute between the railroad carriers and their employees. The controversy was noteworthy because of the large number of workers involved, the vital role of railway transportation in the emergency, and the successful resort to peaceful procedures in adjusting the dispute. Wage questions were of primary importance but the unions of non-operating employees also demanded paid vacations, and the carriers proposed revisions of rules.

After extended negotiations between the carriers and the unions (five operating brotherhoods and 14 non-operating unions), strike ballots were sent out on Aug. 5. In accordance with procedure under the Railway Labor Act, the National Mediation Board held hearings, and when these proved to be unsuccessful, strikes were ordered.

On Sept. 10, the President, under authority of the Railway Labor Act, issued a proclamation creating an Emergency Board. The report of this Board, issued Nov. 5, recommended "temporary additions to wages" much smaller than the permanent wage increases demanded by the unions.

The representatives of the unions declared that they could not accept the recommendations of the Board. Further negotiations failed to bring about a settlement, and on Nov. 27 the President reconvened the Board, which on Dec. 1 announced a compromise settlement. The final arrangements called for a change in basic rates of pay and not for temporary additions to wages. The members of the five operating unions obtained an increase of 9.5 cents per hour and the non-operating em-

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ployees an increase of 10 cents per hour, both groups winning somewhat larger increases than the Board had at first proposed. The advances were smaller, however, than the increases that had already been secured by workers in manufacturing and mining industries since the last rise in railroad wages.

PUBLIC AGENCIES IN THE FIELD OF INDUSTRIAL RELATIONS

The National Labor Relations Board's 1941 decisions defining the bargaining unit or agency were of outstanding importance. These decisions tended to emphasize craft distinctions in a manner that led to an abatement of A.F. of L. criticism and to an increase of criticism in C.I.O. circles.

In the field of conciliation and mediation, the functioning of the machinery created by the Railway Labor Act has just been described. The Conciliation Service of the Department of Labor expanded its work of intervening in labor disputes in the public interest and collaborated extensively with the Mediation and Conciliation Section of the OPM Labor Division. This latter agency, operating primarily in war industries, attempted through the influence of bi-partisan representatives to bring together the parties to disputes and thus to settle the disputes by mutual agreement, if possible without work stoppages.

The increase in work stoppages early in 1941 led to the establishment on March 19 of the National Defense Mediation Board. The Board was composed of 11 members, four for employers, four for employees, and three for the public. Alternates were provided for in an order of April 4. The Board handled cases certified to it by the Secretary of Labor. Disputes were usually referred by the Board to a group of members, the group selected for any dispute including at least one representative of employers, one of employees, and one of the public.

The most noted case that came before the Board was the captive coal

mines dispute, already discussed. This case was handled by the Board as a whole. The refusal of the Board to recommend a union shop in the captive mines led to the withdrawal of the two C.I.O. representatives. This threatened disruption of Federal mediation machinery was soon followed, however, by the outbreak of war, which led to an agreement on the terms for establishing a war labor board.

EFFECT OF THE WAR ON INDUSTRIAL RELATIONS

There was a sharp decline, as previously stated, in work stoppages before the beginning of the war on Dec. 7. Many difficult problems remained, however, and efforts were being made before the declaration of a state of war to reach an agreement for substituting peaceful methods without a surrender of the legal right to resort to work stoppages. Various proposals were made for restrictive national legislation, and a bill was passed by the House of Representatives in a form that called forth the bitter opposition of all labor organizations.

The beginning of the war on Dec. 7 put the question of industrial relations on a radically different basis. On Dec. 11, the President invited the Business Advisory Council to select 12 representatives of industrial management and the A.F. of L. and the C.I.O. each to choose six representatives of employees for a conference in Washington. The purpose, as defined by the President, was "to reach a unanimous agreement to prevent the interruption of production by labor disputes during the period of the war." The President chose as moderator of the conference the chairman of the National Defense Mediation Board, and as associate moderator, the chairman of the Senate Committee on Education and Labor.

The conference convened on Dec. 17. The main obstacle encountered was the reluctance of employers' representatives to agree to the settlement of all industrial disputes by peaceful means. They held that any board set up for handling disputes should not

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accept for consideration any demand by the union "requiring a person to become or remain a member of a labor organization if he is to get or hold a job." This issue, however, had been generally recognized as a fair question for collective bargaining and was so adjudged by the Board of Arbitration in the captive mines dispute.

The representatives of employers at length yielded, and on Dec. 23 an agreement was reached on three points: (1) barring of all strikes and lock-outs; (2) settlement of all disputes by peaceful means; and (3) setting up of a war labor board to handle disputes. There was not enough time remaining, however, to complete in 1941 the detailed work of planning the structure and selecting the membership of the board.

LABOR LEGISLATION

All of the 46 state and territorial legislatures in session in 1941, with the exception of the New Mexico legislature, passed some legislation directly affecting labor. Few of these laws, however, were of outstanding importance.

An outburst of anti-strike sentiment found expression in many bills restricting labor unions, and some of these were enacted. Thus, a Texas law severely restricted the right to picket and to engage in activities defined by the law as interfering with the right to work and viewed by unions as interfering with constitutional liberties essential to the maintenance of the right to organize. Labor unions also opposed anti-sabotage bills, several of which were passed, on the ground that they were so phrased as to endanger the legal right of unions to strike and picket.

Florida established a 16-year minimum age for work in factories and in other ways extended and strengthened its child-labor legislation. Rhode Island passed a "little Wagner" Labor Relations Act.

Congress provided for Federal inspection of coal mines, long desired by miners. The Congressional authorization for the taking over of

property required for national defense had a bearing on the status of strike-bound plants. Congress authorized an extension of housing facilities for workers in areas of war production and made extensive appropriations for the development of recreational, educational, and other community facilities in these areas. Plans were drawn up for a proposed extension of social security legislation to agricultural workers and other unprotected groups.

COURT DECISIONS AFFECTING LABOR

The Fair Labor Standards Act was unanimously upheld by the Supreme Court. Most of the decisions relating to the work of the National Labor Relations Board tended to strengthen that agency. The Board was upheld, for example, in a decision to the effect that refusal to hire a worker because he is a member of a union is an unfair practice. The authority of the Board was also upheld in its determination of the appropriate bargaining unit and in its rulings to the effect that an employer who reaches an agreement with his employees can not under the law refuse to enter into a signed agreement.

In a number of picketing cases, the right to carry on peaceful picketing was maintained. In one case, however, the Supreme Court upheld an injunction against picketing, not because the picketing in question was violent but because it was "set in a background of violence." A decision of the Court in another case upheld the power of the A.F. of L. to determine the jurisdiction of its affiliates and thus strengthened the Federation in the handling of jurisdictional disputes. The Court also limited the application of the anti-trust laws to labor unions, thereby checking the program of the Department of Justice for prosecuting unions, especially in the building trades, on charges of monopolistic restrictions in union rules and agreements.

A California law, giving to state officials the authority to restrict the movement of individuals across the

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state boundary, was held invalid in the "Okie" case. This decision, although not applying exclusively to workers, grew out of the effort of California to check the inflow of unemployed and propertyless workers and farmers.

ADMINISTRATION OF LABOR LAWS

Outstanding developments in recent years have been in the field of administration and of the formulation of administrative law. Several states in 1941 passed measures for strengthening the administration of labor law, as in Rhode Island, where administrative machinery was authorized for handling workmen's compensation, formerly handled in the courts. The rules, orders, safety codes, etc., issued by administrative bodies, now form a recognized and increasingly important part of the general body of labor law.

A summary statement of the growth of administrative law is not possible. These developments were reflected, however, in the proceedings and resolutions of the annual meeting of the International Association of Governmental Labor Officials, held in St. Louis Sept. 3-6, and of the Eighth National Conference on Labor Legislation, held in Washington Nov. 12-14.

At the Conference on Labor Legislation, delegates were present from 40 states, Alaska, and the District of Columbia. State governments and all groups of organized labor were represented. This conference, and also the meeting of state labor officials, dealt with labor legislation and labor standards in the broader sense, including administrative problems and

the development of administrative law. The major subjects discussed included the maintenance and extension of standards during the national emergency and labor problems in the post-war economy. In the planning and carrying out of measures of post-war reconstruction, full cooperation, it was urged, should be maintained with the International Labor Office.

INTERNATIONAL LABOR ORGANIZATION

The International Labor Organization found it necessary to suspend most of its activities in 1940. Work on a significant scale was resumed, however, in 1941, with war-time headquarters at McGill University in Montreal.

An extraordinary or special session of the International Labor Conference was held in New York City from Oct. 27 to Nov. 5. Representatives were in attendance from 35 countries. The government delegations included 12 ministers of cabinet rank. The Secretary of Labor of the United States was chosen president of the Conference. The International Labor Organization is founded on the principle of collaboration between workers, management, and government. The meetings in New York City gave much consideration to war-time developments in this tripartite collaboration. The acting director's report dealt, however, with "The I.L.O. and Reconstruction," and the main purpose of the special conference was to discuss post-war planning. It is expected that the work of the International Labor Office will be directed largely to this end. (See "International Labor Office," p. 99.)

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DEFENSE IMPACTS ON EMPLOYMENT

The year 1941 witnessed pronounced changes in the employment situa-

tion in the United States. By the fall of 1940 the hesitations and contradictory movements in employment trends characteristic of the earlier

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part of the year gave place to a steady rise in employment which continued throughout 1941. The Federal Reserve index of industrial production (revised to give adequate weight to new industries developed in the twenties and thirties) rose from 130 in October 1940 to an estimated 168 in December 1941 (1935-39=100). The effects of defense production more than counterbalanced reductions of a seasonal character in coal production and restrictions of output of certain consumers goods, so that the total production index did not show the usual seasonal slack in the late autumn of 1941.

The intensification of the defense effort and the outbreak of war in December 1941 created an active demand for labor in war industries. Toward the end of the year, layoffs began to occur in non-defense industries. Some of these, such as the Detroit automobile lay-offs, were caused by the necessity of re-tooling plants for defense production, and the resulting unemployment is, therefore, expected to be temporary. In other cases, the effect of material shortages, allocations of scarce goods, and the application of priorities has been to close plants without necessarily promising early re-absorption of the labor displaced, unless the plants affected are part of the defense group and can expect favored treatment with respect to materials. The result of inability to shift displaced labor promptly into defense uses was that unemployment began to spread in the last months of 1941 at the same time that employment in war industries was increasing at unprecedented rates.

In every month from February through October 1941, non-agricultural employment as a whole exceeded all previously recorded levels, according to estimates of the U. S. Bureau of Labor Statistics. From October 1940 to October 1941 there was a gain of about 3,300,000 in employment, half of which occurred in manufacturing. The following table (Bureau of Labor Statistics) gives employment increases by major types of business activity, and shows the concentra-

EMPLOYMENT ESTIMATES

(in thousands)

	October 1940	October 1941
Total civil non-agricultural employment	37,375	40,749
Employees in non-agricultural establishments	31,233	34,606
Manufacturing	10,914	12,768
Mining	856	908
Construction	1,654	1,980
Transportation and public utilities	3,121	3,364
Trade	6,706	7,068
Financial, service and miscellaneous	4,105	4,252
Government	3,876	4,266
Military and naval	733	2,014

tion of the increase in manufacturing.

The concentrated nature of labor demand is further reflected in the differences in the employment situation in different parts of the country. Since war orders have necessarily been placed where productive equipment was available, the effect of the defense program has been uneven geographically. Thus the New England States as a group experienced a 15 per cent increase in the number of employees in non-agricultural establishments from September 1940 to September 1941, with Connecticut, an important defense-industry state, showing a gain of over 18 per cent. The Pacific Coast States likewise experienced a 15 per cent increase in non-agricultural employment in this period. The Middle Atlantic States enjoyed a 10 per cent employment increase, a large part of which was attributable to defense orders placed in northern New Jersey. The Southern States east of the Mississippi and the east-north-central region witnessed employment increases in this period of 10 to 19 per cent. On the other hand, the Mountain and west-north-central states have not been regions of defense activity and, with the exception of a few states (Missouri, Kansas, New Mexico), experienced no such employment rises from September 1940 to September 1941 as those quoted above for other regions.

The effect of war production on

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employment in the durable goods industries has been pronounced, since a large part of defense products are found in this category. The Bureau of Labor Statistics index of factory employment shows a steady upward trend in 1941 in both durable and non-durable goods manufacturing, but, as shown below, the increase of employment in the durable goods field was more marked. The figures reflect seasonal variations.

INDEXES OF FACTORY EMPLOYMENT

(1923-25 = 100)

	All Manu- facturing	Durable Goods Group	Non- durable Goods Group
1939 average.	99.9	90.2	109.2
1940 average.	107.5	104.3	110.6
1941			
January...	115.5	118.3	112.7
February...	117.8	121.0	114.7
March.....	119.9	123.7	116.3
April.....	122.6	127.7	117.8
May.....	124.9	131.3	118.8
June.....	127.9	135.1	121.1
July.....	130.7	137.7	123.9
August.....	133.0	138.7	127.7
September..	135.3	142.2	128.7
October....	135.1	143.7	126.9

EMPLOYMENT CHANGES BY INDUSTRY

The rapid expansion of employment in industries directly stimulated by war orders is shown in the table below. The iron and steel industry's employment index, which stood at 106.8 in October 1939, had risen to 139.8 by October 1941 (1923-25=100). All branches of the machinery industry showed gains, but the effect of the earlier pronounced slump of the thirties in machine tool production is revealed by the increase of employment in that industry to three and a half times its 1923-25 level by October 1941, a reflection of intense demand for machine tools as a means to defense production. Likewise, aircraft employment, which was insignificant in 1923-25, had increased 90 times by the fall of 1941, representing a completely changed role for the

industry in the economy. Automobile employment, on the other hand, was halted in late 1941 by the government order restricting the output of cars and trucks for civilian use. Lumber and allied products represent a durable goods group which has not been favorably stimulated by the war.

The increases in employment in the non-durable goods group are much less marked. Except for explosives (for which employment and production figures are not available) non-durable goods are less affected by the war effort than by the satisfaction of consumer needs. Employment increases in these fields are attributable in part to war orders for the military forces, however, and in part to increase consumer demand arising from higher wages and employment in the war industries.

EMPLOYMENT INDEXES FOR SELECTED INDUSTRIAL GROUPS

(1923-25 = 100)

	October 1940	October 1941
Selected durable goods industries:		
Iron and steel	117.1	139.8
Machinery	127.3	180.3
Agricultural	134.9	170.8
Electrical	116.1	169.9
Machine tools	257.9	361.4
Lumber and allied products	74.4	79.4
Transportation equipment	139.5	200.0
Aircraft	4,115.9	9,156.7
Automobiles	125.1	125.6
Shipbuilding	197.4	483.7
Selected non-durable goods industries:		
Chemicals, paints, petroleum and coal products	125.4	148.5
Chemicals	145.6	182.7
Rayon and allied products	311.1	326.4
Food products	141.3	151.3
Leather products	90.0	98.5
Paper and printing	117.6	126.5
Textiles and products	104.5	114.6

Employment in the Federal Government showed changes from 1940 to 1941 comparable in direction and relative magnitude to those in private industry. From June 1940 to June 1941, Federal civilian employment in-

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volved in defense increased from 234,-874 to 533,380, or 127 per cent. Non-defense services, some of which contribute information or assistance to defense departments, increased their personnel over the same period by only 7 per cent. Among the governmental activities in which personnel reductions occurred were agriculture, welfare, general information and research (largely caused by the dismissal of temporary employees engaged on the 1940 Census), conservation and development. The general shift in the direction of governmental activities under war pressure is reflected in the increase in the proportion of Federal personnel engaged in defense activities (including the armed services) from 47 to 73 per cent of the total. In the month of September 1941, employment in the regular branches of the Federal Government, excluding the military, was 1,497,000; in the military branch of the Federal service there were 1,992,000 in the same month.

EMPLOYMENT IN MINING

Changes in mining employment, with 1929 as a base, are shown below, in indexes prepared by the Bureau of Labor Statistics. Metalliferous mining has been affected by the defense program, as has bituminous coal mining. Anthracite mining employment showed relatively little change in 1941 over the previous year. The total number of persons employed in mining of all kinds is estimated by the Bureau of Labor Statistics to have increased from 853,000 in November 1940 to 911,000 in November 1941.

MINING EMPLOYMENT

(1929 = 100)

	Index 1939	Index 1940	Per Cent Change October 1940- October 1941
Anthracite....	50.6	50.7	+1.8
Bituminous...	78.6	88.0	+6.5
Metalliferous..	62.7	69.9	+9.4

RAILROAD EMPLOYMENT

In recent years the railroad industry has encountered competition from trucking, automobiles, and aircraft which appears to have had a permanent effect on employment on railroad carriers. In 1941, however, the defense program renewed the demand for rail transportation, and the employment index (Class I railroads, U. S. Interstate Commerce Commission) in each month showed increasing gains over 1940. Freight car loadings increased during the year, and in October 1941 the Federal Reserve Board index for this business indicator was at 127, as compared to 110 in October 1940 (1935-39=100).

Unemployment insurance applications filed by railroad workers covered under the Railroad Unemployment Insurance Act in July 1941 (beginning of the benefit year) amounted to 18,144, as compared to 43,136 in July 1940. The increase from June to July was much less marked in 1941 than in 1940, reflecting improved employment conditions in this industry.

INDEX OF RAILWAY EMPLOYMENT

(1923-25 = 100)

	1933	1940	1941
January.....	54.9	55.4	57.0
February.....	54.4	55.6	57.6
March.....	52.7	55.3	58.8
April.....	52.2	55.1	60.5
May.....	52.0	56.7	63.0
June.....	52.7	57.9	64.7
July.....	54.2	58.8	66.5
August.....	55.6	59.3	67.6
September.....	56.7	59.7	67.8
October.....	56.1	60.1	68.2
November.....	55.5	58.4	
December.....	55.2	57.4	

EMPLOYMENT IN UTILITIES, TRADE, AND HOTELS

Employment in utilities is relatively stable, being affected in a pronounced way only by major changes of technological character, such as the introduction of the dial telephone and consequent displacement of operators, or by substantial changes in demand. Telephone and telegraph employment

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showed a marked increase from October 1940 to October 1941, due to the pressure put upon the communication system by defense activity.

Retail and wholesale trade in general increased during the year, and

employment likewise showed gains, although increased business activity in these branches of enterprise does not require increase labor forces in the same proportion as does manufacturing production.

EMPLOYMENT IN UTILITIES, TRADE, AND HOTELS

(1929 = 100)

(Per cent changes from same month in 1940)

	January 1941	April 1941	July 1941	October 1941
Public utilities:				
Electric light and power.....	+1.7	+2.1	+2.8	+1.7
Street railways and buses.....	-0.8	-0.2	+1.4	+2.5
Telephone and telegraph.....	+5.2	+8.2	+12.4	+14.5
Retail trade.....	+4.0	+8.8	+8.5	+6.9
Wholesale trade.....	+0.3	+3.3	+5.2	+6.0
Hotels.....	+2.0	+2.6	+4.1	+2.3

CONSTRUCTION EMPLOYMENT

Employment in the construction industry has been at once greatly stimulated and greatly depressed by the defense program. New factory construction and alterations, construction of war bases and army buildings, and erection of defense housing have absorbed for temporary periods large numbers of construction workers. On the other hand, severe restrictions in the use of building materials for civilian use during 1941 left other thousands of construction workers without employment at their usual trade. It is expected that, unless construction labor can be retrained or shifted to war occupations, unemployment in this field will be of major proportions during the war period.

The Federal Reserve index of value of residential construction contracts awarded rose from 85 in October 1940 to 96 (preliminary figure) in October 1941, an increase due largely to the erection of defense housing. Non-residential building projects numbered 9,907 in October 1941 as compared to 7,284 in October 1940, as reported by F. W. Dodge Corporation for 37 states. The same agency reported a 15 per cent increase in residential building projects over the same period, a decline of 15 per cent in public works projects, and an increase of

about 16 per cent in utilities projects. These variations in the direction of construction activity indicate the dispersed and temporary character of employment in this field. In view of the fact that construction activity, unlike factory production, does not persist at the same rate throughout an entire period of war economy, construction unemployment is usually expected during war periods.

Estimates of employment in construction made by the U. S. Bureau of Labor Statistics show 1,490,000 construction employees in October 1940 and 1,795,000 in October 1941.

AGRICULTURAL EMPLOYMENT

Employment on farms in 1941, with comparisons with 1940, is shown in the table next page (Department of Agriculture). During 1941 farmers competed with defense-stimulated industries for workers, and for the first time in several years they experienced the threat of a long-term difficulty in obtaining labor. Farm employment throughout the year was at less than the usual levels. Farm wage rates rose to the highest level since 1930, in an effort to meet the competition of renewed industrial activity. Only in the dairy region of New York State, however, were serious problems of labor shortage reported by the State Em-

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ployment Service during the fall season. The increase in farm wages during the summer was sufficiently successful in attracting labor so that only localized shortages developed, and the Agricultural Marketing Service reported that "instances were rare when the weather was not a much more important determinant of crop out-turns than the farm labor supply" (Farm Labor Report, Oct. 13, 1941). In view of the drop in farm labor available for hire in 1941, as compared with 1940 and earlier years, the absence of any serious or widespread shortage indicates the excessive supply of farm labor available for work in earlier periods.

FARM EMPLOYMENT

(Thousands)

	Total	Family Labor	Hired Labor
April 1			
1940.....	9,797	7,684	2,113
1941.....	9,714	7,585	2,129
June 1			
1940.....	11,896	9,131	2,765
1941.....	11,649	8,874	2,775
August 1			
1940.....	10,867	7,986	2,881
1941.....	10,633	7,766	2,867
October 1			
1940.....	11,735	8,683	3,052
1941.....	11,532	8,482	3,050

CENSUS DATA ON EMPLOYMENT AND UNEMPLOYMENT

During 1941 the decennial census data on employment and unemployment, covering the last week of March 1940, were made available. The employment status of the population 14 years old and over is shown in the table below. The figures on unemployment should be used with caution. For census purposes there were included as employed all persons who worked for pay or profit or in family enterprises without pay, and those who were not at work in the week of March 24-30 because of lay-offs of not more than four weeks and of specified termination date, those not at work because of temporary ill-

ness, industrial dispute, bad weather or vacation. This definition of employed workers, therefore, includes those who were seasonally unemployed in the week in question.

Over half of those reported as seeking work by the census were concentrated in seven large industrial states (New York, Pennsylvania, Illinois, Ohio, California, Massachusetts, and New Jersey). The proportion of women seeking work was roughly similar to that of men; the proportion of non-whites seeking work was generally higher throughout the country than for whites.

About two out of every five persons over 14 years old in the population was reported in the labor force in 1940, the proportion ranging from 46.4 per cent in Utah to 61.8 per cent in the District of Columbia.

EMPLOYMENT STATUS OF POPULATION 14 YEARS OLD AND OVER

(March 24-30, 1940)

Population 14 years old and over..	100,972,196
Total labor force:	
Number.....	52,840,762
Per cent of population.....	52.3
Employed (except on public emergency work):	
Number.....	45,350,430
Per cent of labor force.....	85.8
Employed on public emergency work:	
Number.....	2,380,062
Per cent of labor force.....	4.5
Seeking work:	
Number.....	5,110,270
Per cent of labor force.....	9.7
Persons 14 years and over not in the labor force.....	48,131,434

UNEMPLOYMENT AMONG INSURED WORKERS

Employment on the defense program resulted in a decrease in the numbers receiving unemployment benefits in the country in 1941. In the first nine months of the year, total disbursements in benefits were about \$275,000,000, or 35.6 per cent less than in the same months of 1940. In the states in which defense activity was concentrated, benefit disbursements declined at a faster rate than in other states: 36.4 per cent as compared with 33.1 per cent (Summary of Employment Security Activities, September 1941, Social Security

EMPLOYMENT CONDITIONS

Board). By September 1941, unemployment insurance payments had reached the lowest monthly point since payments were inaugurated for all states in July 1939. The number of weeks of benefit compensated declined 7 per cent from the same month of the preceding year in January 1941, 38.8 per cent in April 1941, 50.1 per cent in July 1941, and 41.5 per cent in September 1941. In the last two months of the year, increases in claims were observed in states where priorities and curtailments were affecting employment, notably in the largest jurisdiction (New York) and in Michigan.

LABOR SUPPLY AND DEMAND IN DEFENSE OCCUPATIONS

Through the offices of the State Employment Services (transferred to the U. S. Employment Service in December 1941), reports are received on local labor market situations throughout the country for use in connection with maximizing the efficient use of labor for the defense program. In the first nine months of 1941, the State Employment Services made more placements than in the entire year 1940: 4,000,000 jobs were filled by 2,700,000 individuals during this period, as compared to 3,800,000 jobs filled by 2,400,000 persons in 1940. By the end of 1941, registrations for work in the employment offices were the lowest in the history of the Service, reflecting the greatly increased job opportunities generally open.

Reports are received every other month by local employment offices from employers in defense industries (not necessarily holding defense contracts) on expected hirings over the next six months. These data are neither comprehensive nor do they represent a statistically valid sample; moreover, employers' own estimates of labor needs are subject to a number of qualifications, of which uncertainty as to receipt of defense orders and materials is outstanding. Nevertheless, the data appear to follow in general the fluctuations in labor demand which are apparent from other

statistics and knowledge of the general economic situation. In September 1941, for example, the expected new hirings for the next six months showed some decline from the previous rate of expected hirings, reflecting the trend toward maximum use of labor in the reporting firms and also actual lay-offs due to shortages of materials.

About 475,000 workers were scheduled to be hired in 9,900 establishments in 26 defense industries from September 1941 to February 1942. About 100,000 workers employed during the first two weeks of September were scheduled to be laid off, more than a third of them during September and October (Bureau of Employment Security, Social Security Board). The aircraft and shipbuilding industries accounted for over 50 per cent of all new hirings up to the end of February 1942, and another 23 per cent of the new hirings were expected to take place in iron and steel and the non-electrical machinery industries. More than one-third of the expected hirings were reported from Michigan, New York, Ohio, and Pennsylvania; one-seventh were reported from California, an important center of ship and airplane production.

The existence of labor shortage at the same time as unemployment reflects a number of factors in the labor market situation. Shortages of skilled metal workers in shipbuilding, aircraft, and machine tool production have existed for over a year. Local shortages have been engendered by lack of geographical transference of labor, which has encountered both employer and employee opposition. During 1941 employers in general hesitated to use women workers who were available locally, and in many cases refrained from making use of local racial or national minority groups.

In an effort to adjust available labor to the needs of defense production, training in war industry work developed throughout the country at a rapid pace in 1941. According to Associate Director Sidney Hillman of

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OPM, nearly 2,500,000 persons were enrolled for training from June 1940 to the end of 1941. Twelve hundred public vocational and trade schools, 155 colleges and universities, and 10,000 public school shops participated in this program. In addition, more than 2,000,000 workers are receiving training from employers in war contract factories through arrangements

made by the training-within-industry branch of the OPM Labor Division. NYA, CCC, and WPA are also engaged in defense training. The increase in lay-offs due to priorities is expected to stimulate greatly in 1942 the re-training programs undertaken for experienced workers whose own trades are not stimulated by war demands.

CHILD LABOR

By COURTENAY DINWIDDIE

GENERAL SECRETARY, NATIONAL CHILD LABOR COMMITTEE

TRENDS IN CHILD EMPLOYMENT

"In the first World War there was a great increase in child delinquency, and disregard of the compulsory attendance and child labor laws. In the present emergency these conditions may arise again."

These words from Pennsylvania's bill H.R. 68, which urged the Department of Labor to enforce strictly the child labor laws of the state and which died in the House, contain a warning as to the 1941 trends in the field of child labor. The expanding defense program has already caused a sharp increase in labor of minors. Placement and permit figures confirm this upward trend of young labor. In 29 states and the District of Columbia, where the minimum age for employment during school hours was the same in both years, 2,355 first employment certificates were issued for 14- and 15-year-old boys and girls in the first six months of 1941 as against 1,236 in the similar months of 1940, an increase of nearly 100 per cent. During the spring of 1941, girls and boys of 16 and 17 were going to work in such large numbers that certificate officials found it impossible to meet the demand without additional staff. Incomplete reports from 13 states and the District of Columbia show in round numbers 79,000 certificates issued during this period as compared with 30,000 in the similar period in 1940, an increase of more than 160 per cent. In 21 states where employ-

ment certificates are issued to minors of this age only on request, incomplete returns show approximately 15,000 in 1940 in comparison with 8,000 in 1939. But in the first six months of 1941 the total rose to approximately 20,000, a figure almost as large as the number issued in the entire two preceding years, and representing an increase of 282 per cent over the corresponding months of 1940.

Vacation permits in the areas reporting them showed an increase of 147 per cent for the 14- and 15-year-old minors and of from 250 to 375 per cent for the 16- and 17-year-old group, the latter figure from states which do not require permits but which issue them on request.

As reported by the Bureau of Employment Security of the Social Security Board, job placements for 16- and 17-year-old minors in the first seven months of 1941 were 92 per cent greater than in the corresponding months of 1940. In eight states and the District of Columbia the number of placements had at least tripled. The largest increase occurred in Indiana, Maryland, Oregon, Rhode Island, and South Carolina. These incomplete figures indicated that the upswing in employment had spread to all parts of the United States.

All reports as to late summer and fall harvesting conditions would seem to indicate that a definite increase in child labor continued to prevail in the field of industrial agriculture. In the

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Connecticut tobacco fields employment of children as young as eight years was not unusual and a great number of those minors at work were only nine or ten years old. An estimate by the Connecticut Commissioner of Labor placed the total number of child workers at approximately 3,000. Conditions of employment were poor, including inadequate drinking, toilet, and transportation facilities. Wide-spread school closings and permitted absences for the fall harvesting of crops were reported in many sections of the country but as yet there are no definite data as to the exact ages of the children involved or the length of the periods for which they were excused.

During the first World War, children by the thousands cut short their school to begin work, the increase in some communities being more than 100 per cent. This increase of child labor did not come through a breakdown in legislative standards. These were maintained and in some cases raised, but state laws at the time were far from adequate. Today's standards are higher. All over the country people are working for state laws which will establish 16 years as the desirable minimum age for employment during school hours and 14 years for work outside of school hours. In 12 states such laws are already in effect. Already there have been attempts to weaken state laws with the excuse that absorption of workers by defense industries has decreased the supply of older workers.

1940 CENSUS FIGURES

Although tabulation of the 1940 Census findings is not yet complete, preliminary estimates have been compiled, based on a 5 per cent cross section of the population enumerated in each of the 154,000 Census enumeration districts.

In March, 1940, according to these estimates, there were 4,800,000 boys and girls 14 and 15 years old living in the United States, and 4,900,000 of 16 and 17 years. This is 4 per cent more youth in the younger brackets

than in 1930 and 5 per cent more in the older.

A comparison of 1940's listed "labor force" may be made with 1930's "gainful workers." The 1940 Census lists not only persons actually having jobs in private industry, non-emergency government and government emergency projects in the week of March 24-30, 1940, but also those out of work who were actively seeking employment, and a considerable number of new workers who had never before held jobs. The 1930 data included all persons usually following a gainful occupation, regardless of their status on April 1, 1930. Probably a considerable number from such occupations as seasonal agriculture were included in the 1930 Census but omitted in 1940. According to the figures available, the number of workers between 14-15 years in 1930 was 431,790 and the number in the labor force in 1940 was 255,336. Between 16 and 17 years, 1,478,841 minors were at work in 1930, 1,047,316 in 1940. Between 14 and 17 years inclusive, 1,910,631 of our youth were gainfully employed in 1930 as against 1,302,652 listed in the 1940 labor force. This means a 40.9 per cent decrease in the 14-15 year group, 29.2 per cent less workers between 16-17 years, and 31.8 less in the entire 14-17 group, inclusive.

It must be borne in mind that during the depression decade the number of children employed tended automatically to decrease. In general there were fewer job opportunities, and adult unemployment forced out competition from minors. To these causes should be added a definite Federal and state advance in child labor control. It is only natural, therefore, that the number of minors listed as working in March, 1940 should be lower than in 1930, in spite of a slight population increase. Nevertheless more than 250,000 boys and girls of 14 and 15 years and more than 1,000,000 in the 16-17 age group are at work today. The 1940 Census has no data for children under 14. The 1930 record of 235,328 child workers between 10 and 13 inclusive was at

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the time known to be an understatement because of the very large number of children between those ages or younger known to be employed in street trades, industrial homework, and industrial agriculture.

REPORT OF TOLAN COMMITTEE ON INDUSTRIAL AGRICULTURE

The Tolan Committee which has been studying all phases of migration, both agricultural and defense, classifies the causes of migration as economic and natural. Economic causes include general unemployment, population increase, mechanized industry and seasonal crops. Natural causes include drought, soil erosion, etc. Among the measures recommended by the Committee to alleviate conditions are regulation of employment agencies engaged in interstate commerce, F.S.A. camps, and grants-in-aid to the states. Much testimony concerning child labor is included in the Committee hearings.

REVERSAL OF THE HAMMER VS DAGENHART SUPREME COURT DECISION

"The conclusion is inescapable that *Hammer vs Dagenhart* was a departure from the principles which have prevailed in the interpretation of the commerce clause both before and since the decision and that such vitality, as a precedent, as it then had, has long since been exhausted. It should be and now is overruled."

On Feb. 3, 1941, in handing down his ruling on the *Darby Lumber Case* and the *Opp Cotton Mills Case*, Justice Stone not only upheld the constitutionality of the Fair Labor Standards Act, but expressed the unanimous reversal by the present Supreme Court of the famous (or infamous *Hammer vs Dagenhart* decision in 1918. This decision, passed by a 5-to-4 decision of the Court, and made memorable by Justice Holmes' dissenting opinion, not only overruled the first Federal Child Labor Law; in addition, for over 20 years, it permitted goods which circulate in interstate commerce to be produced by child labor in mills, canneries, factories, and mines of this country.

The three principal questions settled in favor of the Fair Labor Standards Act by the 1941 Court decision were: (1) Has Congress the power to prohibit shipment in interstate commerce of goods produced in violation of the law? (2) May it regulate the wages and hours of employees engaged in production of goods for interstate commerce? (3) In connection with the prescribed wages and hours, can Congress require the keeping of records?

It is interesting to note that the child labor section of the Wage and Hours Law, as administered by Katharine F. Lenroot, chief of the Children's Bureau, sets higher age standards than those in the original Child Labor Law, which was pronounced unconstitutional.

There are, however, four large groups of child workers not now covered by Federal legislation for whom protection is urgently needed: children under 16 years engaged in commercialized agriculture, those in street trades and in intrastate industrial employment, and 16- and 17-year-old youths engaged in intrastate industry of a hazardous character.

Immediately after the Supreme Court decision the National Child Labor Committee issued a statement in which it called attention to the fact that a way is now open by which some of the fields of child labor not as yet covered by Federal legislation can be regulated by Federal law without passage of the Child Labor Amendment.

ADMINISTRATION OF THE FAIR LABOR STANDARDS ACT

Administration of the child labor provisions of the Wages and Hours Law is the most important function of the Children's Bureau. According to the latest report of its Industrial Division, the Bureau inspections during the year ended June 30, 1940 totaled 2,264. Emphasis was given to localities and industries which, in the light of the 1930 Census figures and subsequent legislation, were considered those where children were most likely to be employed. Special atten-

tion was paid to canneries where, in 1937 and before, investigations had disclosed considerable child employment. The inspections covered 1,298 establishments with approximately 235,000 employees. In 188 establishments (14 per cent) 911 children under 16 years were found illegally employed, the majority in fruit, vegetable and seafood canneries and in pecan or walnut shelling. About one-third of the children were under 14 years. Some even as young as nine or ten were found heading and picking shrimp, peeling tomatoes, handling or labelling cans, or picking, cleaning, or shelling walnuts and pecans. A few children seven years or younger were found in this latter type of work.

Two criminal proceedings and 14 civil suits for flagrant child labor violations were brought to a close during the fiscal year. The criminal cases involved an establishment manufacturing lottery tickets and one manufacturing artificial flowers. In both cases the defendant pleaded guilty and was fined. Of the 14 civil suits, seven involved canneries, five involved children in industrial homework, one a manufacturer of boots and shoes, and one a manufacturer of crates, cups and boxes. None of the 16 cases was contested.

In spite of the passage of the Wage-Hour Act, child labor in the field of industrial homework is still a crying evil. The number of firms seeking homework permits and the number of homework permits issued, however, have steadily declined. The attendant increase in the employment of women factory workers is significant and should eventually help effectively to reduce child labor in this field.

In addition to administering the Fair Labor Standards Act the Children's Bureau has issued two new orders concerning the employment of minors under 18 in the hazardous occupations of logging and sawmilling. Occupations involved in the operation of power-driven wood-working machines were also declared hazardous and were forbidden to minors under 18. The three earlier ones declared hazardous work in or about coal mines

and plants manufacturing explosives or as motor-vehicle drivers or helpers.

NATIONAL AND STATE LEGISLATION

There was no change in the status of Federal child labor legislation during 1941. Ratification of the Federal Child Labor Amendment failed to pass in Connecticut, New York, Texas, and Massachusetts. Little interest in the Amendment was shown. The focusing of attention on the 1941 Supreme Court decision, with the resultant feeling that the Wages and Hours Act would continue to be an effective instrument for the reduction of child labor, is quite clearly the main reason for the lesser interest showed in the amendment.

Although 43 out of the 48 states met in 1941, the proportion of constructive laws was small in comparison with the unnatural number of breakdown proposals and the even larger number of beneficial bills which went down to undeserved defeat. Out of eight proposed 16-year bills, Florida's alone passed. This bill, which sets 16 years as the minimum age for factory workers at all times and all workers during school hours also stipulates an 8-hour day, 40-hour, 6-day week for minors under 16 and regulates night work up to 18. Certain unfortunate provisions include a minimum age of 10 years for non-factory employment outside of school hours. The present age of 10 years in street trades is continued, and newsboys may begin work at 3 a.m.

A successful breakdown law was passed in Indiana, removing newspaper carriers from the minimum age, hours, night work, permit and physical examination requirements of the Child Labor Law. In New Jersey an amendment was proposed lowering the 18-year minimum for workers in bowling alleys to 16 years and permitting work until midnight. This passed with an amendment permitting work only to 11:30 p.m., and requiring special permits during the school term, valid only for six months and renewable only after a physical examination

and with the consent of the boy's principal.

Among other breakdown bills, one in Massachusetts to lower standards for bowling alleys passed but was vetoed by the governor. In Pennsylvania an attempt was made to exempt caddies from the Child Labor Law. California considered several street trades bills, one of which passed but was vetoed. This would have permitted boys of 10 to sell papers until 10 p.m., whereas the present permit requirements make 14 the minimum age during the school term. It also attempted to remove work permit permissions. The only attempts at constructive street trades legislation, in California and Michigan, were unsuccessful.

California also made strenuous efforts to break down restrictions on employment of children in industrial agriculture but the bill which finally passed made clear the distinction between children working for their own parents and those employed in industrial agriculture and required compliance with the latter. A bill still pending in New Jersey authorizes the Commissioner of Labor to suspend provisions of the Child Labor Law relating to agriculture. The minimum age, which is now 16 years, could be set at 12 years, even during school hours, and work permits could be waived.

Among the good bills defeated one dealt with fines for employment of children, one with the requiring of employment certificates for minors under 18 and a number with restriction of hours of work for minors. In New Jersey a significant homework bill was enacted, providing that the ratio of home workers shall not exceed one-third of the persons employed in any specified factory or business.

A law in California liberalizes night work for children who work in theatres, radio broadcasting, motion pictures and television studios; a New York law permits children to appear in certain non-profit theatrical performances; another and more inclusive bill relating to children in the

entertainment industry in New York was vetoed because of faulty wording.

CHILD LABOR INVESTIGATIONS

Children in the Theatre by Anne Hood Harken and Gertrude Folks Zimand of the National Child Labor Committee, which was published early in 1941, reached the following conclusion: "On the whole the legitimate theatre is an occupation for a small number of children in which proper safeguards should not be difficult to achieve. If such safeguards are adopted, there is no apparent reason for considering the work detrimental to the child's physical welfare . . . Regulation of the child's work in the theatre must be on a different basis than regulation of other forms of child employment. The objection should be to protect the child from undue strain without depriving him of the opportunity and advantage which such employment may bring. It is a field in which supervision is desirable but legal regulation should be kept to the minimum."

Recommendations formulated by the Advisory Committee dealt with limitations of rehearsal hours, health examinations and work permits and with prohibition, except in unusual circumstances, of additional work in motion pictures, radio or commercial photography, while the child is in a play.

There has been a recent investigation by the Connecticut Labor Department among the tobacco fields of that state. The National Child Labor Committee is conducting an investigation as to the effect of agricultural pressure in causing children to be absent from school.

Investigations made by the Federal Children's Bureau during the last fiscal year include surveys of industrial homework in connection with the lace industries of New York, Rhode Island, and New Jersey, and with the making of candlewick bedspreads in Georgia and Tennessee. The findings are in agreement with earlier studies. Despite the 16-year minimum of the Fair Labor Standards Act, children were at work, earnings were sub-standard,

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and hours of work sometimes excessive.

A Children's Bureau study conducted in three cities—Elizabeth, N. J., Tulsa, Okla., and Richmond, Va.—deals with the employment status of urban boys and girls under 18 who have left school and are either employed or seeking employment.

A survey of conditions in the sugar beet industry, made in 1939, was published in 1941 and shows no marked decrease of child labor. A similar investigation of the cane sugar industry has been conducted by the Children's Bureau in cooperation with the Sugar Division of the Department of Agriculture but the results are not yet available.

NEW PUBLICATIONS

National Child Labor Committee

The American Child (published monthly except during the summer).

State Child Labor Legislation, 1941, by Kate Clugston.

Annual Report for the Year Ending September 30, 1941 by Courtenay Dinwiddie.

Children in the Theatre, by Anne Hood Harkin and Gertrude Folks Zimand.

Bibliography of Migratory Agriculture.

"Child Labor Today Bears Watching," by Gertrude Folks Zimand (reprint from *Public Health Nursing* October, 1941).

"The Prevention of Industrial Crippling," by Courtenay Dinwiddie (reprint from *The Crippled Child*, February, 1941).

It's a Long Lane by Courtenay Dinwiddie.

"Child Labor Problems in Agriculture" (reprint from *Information Service*, Federal Council of the Churches of Christ in America, Jan. 11, 1941).

Primer Class for Migrant Pupils, by Adelaide Nichols Baker, January, 1941.

Children's Bureau

The Child (published monthly).

Welfare of Families of Sugar Beet Laborers.

Young Workers and Their Jobs in 1936.

Junior Placement—A Survey of Junior-Placement Offices in Employment Centers and in Public School Systems.

Industrial Homework Conditions in the Candlewick Bedspread and Lace Industries.

PERIODICAL PUBLICATIONS

American Child

419 Fourth Ave., New York City.

American Federationist

American Federation of Labor, Washington, D.C.

American Labor Legislation Review

131 East 23d Street, New York City.

American Labor World

66 Duane Street, New York City.

Child (The)

Children's Bureau, Department of Labor, Washington, D.C.

Labor Digest

1472 Broadway, New York City.

New Masses

461 Fourth Ave., New York City.

COGNATE SOCIETIES AND RESEARCH INSTITUTIONS

(For further information, the reader may address the following organizations)

AMERICAN ASSN. FOR LABOR LEGISLATION, 131 E. 23rd St., New York City.

AMERICAN FEDERATION OF LABOR, A. F. of L. Building, 9th and Massachusetts Ave., N.W., Washington, D.C.

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| <p>AMERICAN FEDERATION OF MUSICIANS,
1450 Broadway, New York City.</p> <p>CONGRESS OF INDUSTRIAL ORGANIZATIONS, 1106 Connecticut Ave., N.W., Washington, D.C.</p> <p>INTERNATIONAL ASSN. OF GARMENT MANUFACTURERS, 260 Broadway, New York City.</p> <p>INTERNATIONAL ASSN. OF MACHINISTS, Machinists Bldg., Washington, D.C.</p> <p>INTERNATIONAL LONGSHOREMEN'S ASSN., 265 W. 14th St., New York City.</p> <p>INTERNATIONAL SEAMEN'S UNION OF AMERICA, 666 Lake Shore Drive, Chicago, Ill.</p> <p>JUNIOR ORDER OF UNITED AMERICAN MECHANICS, 3029 N. Broad St., Philadelphia, Pa.</p> <p>LEAGUE FOR INDUSTRIAL DEMOCRACY, 112 E. 19th St., New York City.</p> | <p>MARINE ENGINEER'S ASSN., 227 Fulton St., New York City.</p> <p>NATIONAL ASSN. OF LETTER CARRIERS, A. F. of L. Bldg., 9th and Massachusetts Ave., N.W., Washington, D.C.</p> <p>NATIONAL CIVIC FEDERATION, 45 East 34th St., New York City.</p> <p>NATIONAL FEDERATION OF POST OFFICE CLERKS, A. F. of L. Bldg., 9th and Massachusetts Ave., N.W., Washington, D.C.</p> <p>NATIONAL INDUSTRIAL CONFERENCE BOARD, 247 Park Ave., New York City.</p> <p>NATIONAL INDUSTRIAL COUNCIL, 14 W. 49th St., New York City.</p> <p>PILOT'S ASSOCIATION, 119 Broad St., New York City.</p> <p>UNITED LICENSED OFFICERS, 15 Whitehall St., New York City.</p> |
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DIVISION XVII

RELIGION AND RELIGIOUS ORGANIZATIONS

PROTESTANT DENOMINATIONAL ACTIVITIES

BY WINFRED E. GARRISON

DEPARTMENT OF CHURCH HISTORY, UNIVERSITY OF CHICAGO

THE CHURCHES AND ISOLATIONISM

A state of war was thrust upon the United States on Dec. 7, and on Dec. 8 Congress recognized the existence of a state of war. During the greater part of the year, therefore, the churches were functioning in a country technically at peace. Among all organizations in the United States, probably none contained a larger percentage of persons who refused to admit the inevitability of war.

Isolationism, in any accurate use of that term, does not describe the position of those Christians who favored abstention from military participation. The American churches have for generations been urging upon their members a sense of responsibility for the betterment of social as well as religious conditions throughout the world. More than a century of foreign missionary work had emphasized and exhibited this concern. The extension of missionary programs to include medical, educational, agricultural, and industrial activities had won general approval and generous support. The discussion of race relations, both at home and abroad, had become a stock feature of almost every sort of religious conference.

Nowhere had there been more sympathetic attention to the distinction between the "have" and the "have not" nations, or more moving appeals for national penitence for our failure to consider the economic needs of peoples whose standard of living was

far lower than ours. The churches furnished more than their proportionate share of those who felt that the United States had shirked a duty to the world when it refused to join the League of Nations. In recent years, the growth of the ecumenical movement, the active part taken by American churches in the Life and Work conferences with their emphasis upon the religious aspects of world-wide social and economic problems, and the development of the World Council of Churches—all have exhibited an attitude completely opposed to isolationism.

It is to be observed also that many of the Christian leaders who have been most thoroughly committed to these ideas of a world-wide responsibility for American churches have at the same time been insistent that this responsibility could best be discharged if America would stay out of the war. In reviewing the history of 1941 in the life of the churches, it is important to recognize that such opposition to entering the war as was found in the churches was not motivated by a complacent and separatist nationalism. For example, a resolution adopted by the General Assembly of the Presbyterian Church in the U.S.A., meeting in May 1941, said: "Much more is still to be gained in meeting the needs of the world by America remaining free from military participation in the present conflict, not in any spirit of selfish isolationism, nor of moral irresponsibility, but

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with a clear view of joining with other nations in constructive efforts toward a lasting peace."

RELIGION IN WAR TIME

Isolationism has, indeed, not been a descriptive term which any group applied to its own position, but has been a term of condemnation and a one-word argument applied by those who thought America could best serve the world by entering the war to the position of those who thought it could serve the world best by staying out. This fact accounts for what seems a sudden reversal of attitude on the part of the great majority of anti-war leaders and laymen within the churches when Japan's sudden act of war and Germany's and Italy's declarations of war took out of our hands the question of participation or non-participation in the war. The *fait accompli* rendered obsolete and irrelevant all previous arguments about the advisability of entering the war, except those of the absolute pacifists who, though fairly numerous in the aggregate, had constituted but a small minority of the churchmen opposing military participation.

The Friends, the Mennonites, and the Church of the Brethren, who adhere to their testimony for non-violence even under the most rigorous conditions, have maintained their pacifist position without compromise, but also without conspicuous display of their opposition to war. Their energies have been devoted, not to denouncing war, but to efforts for the relief of war-sufferers abroad, care for the rights and interests of conscientious objectors of their own and other communions, and the building of good will against the day when peace is to be made. The other denominations, constituting the vast majority of Protestantism, while having many pacifists among their ministers and members, have rallied promptly to the support of the government, feeling the nation's cause to be that of liberty and democracy, at the same time maintaining their conviction that war is an evil which must be eliminated from the world.

The churches have, in general, been critical of any attempts to regiment or inveigle them into endorsement of this war as a "holy war," or to identify Christianity with democracy. Such efforts as appear to have been made to use the churches as promotional or publicity agencies for the War Department, or to censor pulpit utterances by warning ministers near training camps that their churches would be declared "out of bounds" for soldiers on leave if their comments on national affairs are not what the commandant thinks they should be, have been met with quick resentment. But efforts of this kind have been too few to have any importance unless viewed as forerunners of more to follow.

Statements issued during the year by denominational conventions have emphasized the necessity of maintaining civil rights even in a time of emergency, the importance of freedom of religious expression and of conscience even for those whose consciences will not permit them to engage in war, and avoidance of hatred and hysteria by all. Many of them have specifically urged immediate and intensive study of the conditions requisite for a just and durable peace.

THE PACIFISM ISSUE

After the Selective Service and Training Act went into effect and before America was catapulted into the conflict by the act of Japan at Hawaii, there was ample opportunity for the churches to face all the problems of war except those involved in full-fledged belligerency. Within the churches there was probably a larger percentage of opposition to all the measures preliminary to our war entry than among the non-church population, but no important bodies went on record as opposing them, and there was little intransigence after the fact. Several young pacifist ministers, who had at first refused to register for service, did so when a court ruling permitted them to waive ministerial exemption. Eight Union Theological Seminary students who refused to register received prison sentences of a

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year and a day. A Minnesota Methodist minister who refused to register was asked to resign his pastorate. The typical attitude of churches and church leaders toward men who refused to register has been one of respect for their consciences but disapproval of their judgment.

Statistics on conscientious objectors are incomplete and unsatisfactory because men who fail to pass the physical tests or are deferred on other grounds have no opportunity to place their anti-war sentiments on record. In February 1941, the number classed by the government as conscientious objectors was given as between 6,000 and 8,000. Up to September, fewer than 1,000 objectors were enrolled in the work camps authorized by the government, directed by Friends, Mennonites, and Church of the Brethren, and supported by voluntary gifts, chiefly from church people. A few weeks earlier, when the enrollment was only slightly less, the distribution by denominations was as follows: 321 Mennonites, 90 Brethren, 66 Jehovah's Witnesses, 54 Methodists, 49 Quakers, 35 Presbyterians, 26 Baptists, 18 Church of Christ, 16 Roman Catholics, 15 Congregational-Christians, 11 Episcopalians, 10 Lutherans, seven Adventists, four Disciples of Christ. A later count, including camps under Presbyterian and Catholic auspices, would perhaps double the total number without greatly altering the distribution. Representatives of 23 denominations, meeting with the National Service Board for Religious Objectors, agreed that the churches should support the camps.

In view of the large amount of anti-war sentiment and the considerable amount of absolute pacifist conviction that has existed as a minority opinion in all the larger denominations, it is remarkable how little tension this issue has occasioned within the several bodies, either before or after the declaration of war. Pacifists and non-pacifists have agreed in treating the issue as one on which Christians can honestly differ within the limits of Christian fellowship. Denominations

which are predominantly non-pacifist have mobilized their forces to protect the rights of conscientious objectors and have utilized their agencies to secure funds for their support in work camps. The Fellowship of Reconciliation advised young men to register under the Selective Service Act. Four months before our involvement in hostilities, the F.O.R. announced that over 2,000 ministers had signed a "no war" pledge, by which they declared that they would never use their ministry to "bless, sanction or support war." Immediately upon our entrance into the war, the Ministers' No War Committee published an appeal both to its own adherents and to Christians generally, to exercise all patience and restraint in their attitudes toward those of different views, and to maintain Christian fellowship in the churches regardless of such differences.

On the other hand, long before Pearl Harbor closed the debate, there was a large body of Protestant opinion in favor of American participation in the war. Dean Lynn Harold Hough had declared that pacifism is "the great modern Christian heresy." A group of influential leaders, headed by Prof. Reinhold Niebuhr, began in February 1941 the publication of a fortnightly paper, *Christianity and Crisis*, denouncing neutrality and non-belligerency as well as pacifism. This was generally regarded as an effort to offset the anti-interventionist position of the *Christian Century*. The 26th annual meeting of the World Alliance for International Friendship through the Churches, held at Rochester, N. Y., Nov. 9-11, 1941, presented the aspect of an interventionist congress.

APPEALS FOR EUROPEAN RELIEF

There was as sharp difference of opinion among churchmen in regard to the sending of food to Europe—the Hoover plan to secure British permission to pass through the blockade food bought with their own money for the occupied countries of Europe. Many religious papers and leaders

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and some denominational assemblies favored this plan on humanitarian grounds. On the other hand, in March, 35 prominent men, including several college presidents and one Episcopal bishop, signed an open letter to Secretary of State Hull protesting against such action on the ground that it would help Hitler. The difference here was hotly argued, but it was obviously not a difference in sympathies or principle but one of judgment as to whether, as a matter of fact, such supplies could be delivered to the starving peoples without strengthening the position of the forces that were responsible for their starving condition.

With acute awareness of world conditions imposed by the war, most of the major Protestant denominations used the last week in February 1941 as a period for appeals in the interest of peoples and churches abroad. The principal agencies for which support was sought were the Church Committee for China Relief, Central Bureau for Relief of Evangelical Churches of Europe, American Friends Service Committee, American Committee for Christian Refugees, International Missionary Council's Fund for orphaned missions, and Y.M.C.A. and Y.W.C.A. relief funds.

The churches have also manifested an increased interest in the chaplaincy work and in the support of religious and social activities in the vicinity of army training camps and newly located populations of defense workers. The Federal Council's committee on chaplains was reorganized, under the chairmanship of Bishop Adna W. Leonard. Thirty-three denominations are now represented on this committee.

PROGRESS IN UNITY AND COOPERATION

Progress in unity and cooperation among the churches during the year included further development of the great common agencies of the churches and some steps toward the merging of particular denominations. Most significant of all, perhaps, was the formulation of a plan for the

union of eight national interdenominational agencies in a "Council of the Churches of Christ in North America." This plan was worked out and recommended at a meeting at Atlantic City in December of 200 leaders from many churches. The eight existing organizations whose merger is contemplated are the Federal Council of Churches of Christ in America, International Council of Religious Education, Home Missions Council, Foreign Missions Conference, National Council of Church Women, Council of Church Boards of Education, Missionary Education Movement, and Association of Council Secretaries. If this proposal is accepted by the eight constituent bodies to which it has been referred for action, it will create the most comprehensive structure American Protestantism has ever had as a manifestation of the unity that underlies its divisions and as an agency for the promotion of its common tasks.

During 1941, the Federal Council of Churches of Christ in America was strengthened by adding to its membership the Protestant Episcopal Church, Church of the Brethren, and Presbyterian Church in the United States (Southern). It now includes 24 denominations with 25,946,082 members.

It was reported in November that the World Council of Churches had, within the year, gained the adhesion of the Federal Conference of Churches of Christ in Australia, Presbyterian Church of New Zealand, National Baptist Convention, United Brethren in Christ, Church of the Brethren, Moravians, Five-Year Meeting of Friends, and General Conference of Religious Society of Friends, besides one denomination in occupied territory which, as reported by the secretary, Dr. Henry Smith Leiper, "joined secretly but its name can not be divulged."

No denominational unions are reported for 1941. The United Brethren and the Evangelical Church have a joint commission, and it is unofficially predicted that a merger between them may be effected within three or four

PROTESTANT DENOMINATIONAL ACTIVITIES

years. The two bodies have a total of about 650,000 members. Consideration of the proposed Episcopal-Presbyterian concordat is still pending but it can not be said that there has been any recent progress. The recently united Methodist Church has been busy with the intricate business of unifying its agencies. There is constant, though slow, rapprochement among the several Lutheran groups. Baptists and Disciples continue to cultivate mutual acquaintance and to exchange fraternal gestures, but without pressing the question of immediate union. The new hymnal which they have jointly edited and published will assist in the cultivation of a feeling of unity in worship.

The American Bible Society celebrated its 125th anniversary, observing at the same time the 300th anniversary of the publication of the *Bay Psalm Book*, the first book printed in the British colonies in America.

MYRON C. TAYLOR AT THE VATICAN

During 1940 there was hot debate in many denominational gatherings and in the religious press concerning the President's appointment of Myron C. Taylor as his "personal representative" at the Vatican with the rank of ambassador, with the explicit statement that the envoy was being sent to the Pope "as the head of a church," and with subsequent indications from Rome that this was interpreted as presaging the establishment of formal and permanent diplomatic relations with the Vatican. The executive committee of the Federal Council of Churches voted disapproval of the arrangement if it were made permanent. In 1941 the topic dropped from public view. Mr. Taylor's return to the United States on account of ill health ended for a time the controversial question of his quasi-ambassadorship.

In April a dispatch from Rome that the appointment of a successor was expected aroused a flurry of protest, but there was no appointment. In September Mr. Taylor went on a brief mission to Rome and thence directly

to London where various officials, including a representative from Eire, were hastily summoned to meet him. Interest in the ambassadorship, aroused afresh by that incident, was further stimulated when *The New York Times* published a story from Rome that a new appointment to the Vatican post was expected. The president and secretary of the Federal Council wired the President that they hoped this report had no foundation in fact, and that they were convinced "such a step would have gravely unfortunate consequences." The executive committee of the Federal Council later voted its approval of this message. The State Department said that no new appointment was contemplated.

Without going so far as to assert that the national emergency has produced an authentic "spiritual revival," one can scarcely doubt that it has beneficially affected the popular attitude toward religion. The increased attention to the church is not wholly a recognition of its practical usefulness, if it will allow itself to be used, as an agency for relaying messages from the government to its constituency. It is also partly a discovery of the value of religion as a guiding and sustaining force, and a tribute to the courage which religious leaders in occupied lands have exhibited in defense of civil as well as religious liberty.

PROTESTANT EPISCOPAL CHURCH

Membership in Federal Council.—

By vote of its general convention in November 1940, the Protestant Episcopal Church expressed its desire to assume full membership in the Federal Council of Churches of Christ in America with which it had long held a cordial and cooperative affiliate relationship. At the next meeting of the Federal Council it was welcomed into membership.

New Chicago Bishop.—Rev. Wallace E. Conkling, rector of St. Luke's Episcopal Church, Germantown, Philadelphia, became bishop of the Dio-

cese of Chicago, succeeding the late Bishop George Craig Stewart.

Church of England Missions.—The sum of \$300,000 was raised to aid the missionary work of the Church of England in foreign fields.

The Japanese Episcopal Church refused to join in the union of Protestant churches in Japan, on the ground that it is not a Protestant church.

The Cathedral of St. John the Divine, New York City, was brought another long step toward completion by the removal of the partition between the completed nave and the crossing, revealing for the first time the full vista from the entrance doors to the high altar—one-tenth of a mile—of the world's largest Gothic church.

War Sentiment Poll.—The opinions of the Episcopal clergy on war, as of about July 1, were collected in a poll conducted by the *Living Church*. Three questions were asked: Do you favor immediate American entry into the war? Yes, 1,084. No, 1,900. Would you (if you answered No above) favor entry if the President and Congress declared it necessary in order to prevent German victory? Yes, 1,504. No, 396. Are you a pacifist? Yes, 293. No, 2,691.

LUTHERAN CHURCHES

Closer Organization.—The Lutheran churches in America are moving toward closer organization but still present a rather complicated picture, owing not to divisions that have occurred in this country but to differences of national origin and language and to the still incomplete union of groups deriving from successive waves of immigration. The three main divisions of American Lutheranism are: American Lutheran Conference, Lutheran Synodical Conference of North America, and United Lutheran Church in America. Each of these has a membership in excess of 1,500,000. The American Lutheran Conference includes the American Lutheran Church, Evangelical Lutheran Augustana Synod, Norwegian

Lutheran Church of America, Lutheran Free Church, and United Danish Evangelical Lutheran Church in America. The Synodical Conference includes the Evangelical Lutheran Synod of Missouri and other states, Evangelical Lutheran Joint Synod of Wisconsin and other states, Slovak Evangelical Lutheran Synod of America, Norwegian Synod of the American Evangelical Lutheran Church, and the Negro Missions.

The All-Lutheran Conference at Columbus, O., January 1941, in which the highest officials of all the larger groups participated, made plans for the promotion of Lutheran unity and discussed such problems as giving aid to orphaned non-American Lutheran missions and religious work in army training camps. From this resulted a series of regional pastor conferences in October with representatives of the American Lutheran Conference and the United Lutheran Church to emphasize "the growing need of Lutheran unity in this day of crisis" and to study the relation of the church to labor, economic problems, and international relations. In January the American Lutheran Church appointed another commission to promote unity with other Lutheran churches, especially the United Lutheran and the Missouri Synod.

The National Lutheran Council, Dr. Ralph H. Long, executive secretary, has successfully appealed for large sums for the support of orphaned missions, for the aid of Lutheran refugees from and in Europe, and for work in the army camps. The American Lutheran Conference has had a very large part in all these enterprises, as well as in initiating and promoting the unity movements that have been mentioned.

The Norwegian Lutheran Church in America, with a present total membership of 570,330, besides contributing largely to the activities already mentioned, has secured pledges amounting to \$2,420,000 (of which \$1,475,000 has been received in cash) toward a fund in celebration of the centenary of the church. It has been especially active in Norwegian relief,

has adopted a school for the blind in China (formerly supported by churches in Norway), and took the initiative in getting the exiled Norwegian Government in London to appropriate £50,000 for the foreign mission work of the Church of Norway. An entirely new set of graded lessons for Sunday schools has been prepared and published under the supervision of the Board of Parish Education.

The Danish Lutheran Church in America took part in all cooperative Lutheran activities. Its convention, at Cedar Falls, Ia. June 10-15, 1941, authorized a "jubilee appeal" for \$230,000 to commemorate the beginning, 60 years ago, of its synod and its college and seminary at Blair, Neb.

The Missouri Synod, with 3,467 active ministers and 1,408,677 members, has 1,357 missionaries serving 246,323 souls in 24 languages in North and South America, India, and China. To cultivate the missionary spirit, "Call of the Cross" meetings have been held at many places. A motion picture, "The Power of God," produced under the auspices of the Synod, has won wide approval. It has been booked in more than 1,000 churches and is being shown in army camps. The Synod lays special stress upon Christian education for its children, young people and adults, and reports "a revival of the consciousness of the need for more doctrinal instruction of children through our day schools and Sunday schools." It has been very active in its service to soldiers and sailors. The Missouri Synod has long had an army and navy commission, and it has placed more than 70 of its ministers in the service as chaplains. During 1940 the Synod raised \$12,660,422 for local purposes, and \$2,920,005 for missions, benevolences, and synodical activities. During the past two years an old indebtedness of \$1,000,000 has been liquidated. The Associated Lutheran Charities of the Synodical Conference of North America reported, at its convention at Indianapolis in October, that receipts for the year had exceeded \$3,000,000, by which 770,000

persons had been aided through 126 institutions.

The United Lutheran Church has participated in a large way in all cooperative efforts to provide a spiritual ministry to men in the army and navy, to maintain foreign missions cut off from support by the European churches, and has been unremitting in its efforts to seek the closest possible union of all Lutherans. In view of the fact that 1942 marks the 200th anniversary of the landing of Henry Melchior Muhlenberg in America, the organizer of the Lutheran Church in the Colonies, and the 100th anniversary of the landing of Frederick Heyer in India, the first missionary sent by American Lutherans to a foreign field, preparations are being made for the commemoration of these events. This and the emergency requirements for service at home and abroad give special significance to the biennial convention to be held in Louisville, Ky., Oct. 14-21, 1942.

Various Activities.—The particular item of its program which this church selected for emphasis in 1941 was the initiation of a new "tract" service for the production of tracts and their systematic distribution to its whole constituency. The church's board of social missions resolved, a year ago, to support national defense by encouraging the churches to strengthen faith in democracy, defend civil liberties, oppose race prejudice, promote respect for law and love of country, and "cultivate the will to peace." In April its executive committee appealed to the churches to raise \$250,000 for religious and social work in the camps, voted to continue negotiations for union among Lutheran groups, and urged the churches to raise pastors' salaries in view of the increased cost of living.

METHODIST CHURCH

Instrumentalities of Union.—The Methodist Church, now embracing the three former bodies, Methodist Episcopal, Methodist Episcopal South, and Methodist Protestant, has been diligently working out the implications of the recent union and creating

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the instrumentalities to carry on its consolidated work. The two great denominational publishing houses, Abingdon and Cokesbury, have been united to form the Abingdon-Cokesbury Press. Three boards of education have been fused into one. Similarly, the boards of home and foreign missions have been united. The new *Advocate*, representing a consolidation of six denominational papers, has amply demonstrated its right to the prominent place which its immense constituency gives it in the journalistic world. A new religious monthly magazine for students, *Motives*, has been started by the Methodist Student Movement.

Acts in Relation to War and Defense.—A year ago the Methodist commission on world peace asked for repeal of the Draft Act, and later it opposed any extension of conscription. At the same time the church gave moral and financial support to its conscientious objectors, while also adopting extraordinary measures to promote the welfare of the men in the army and navy. Practically on one day—March 2, designated as a “day of compassion”—\$1,000,000 was contributed for aid to Christian refugees in Europe and Asia, for help to British Methodist churches, and for religious and social programs in army training camps and the churches adjacent to them.

Withdrawal of Far East Missions.—Disturbed conditions in Japan, and especially the forced union of the Protestant churches under the supervision of the government, led to the sending of Bishop W. O. Baker and Dr. Ralph E. Diffendorfer of the Board of Foreign Missions to Japan in January, 1941 to study the situation. On the ground of their report and in accordance with their recommendation, the Board voted to withdraw Methodist missionaries from Japan, Korea, and the parts of China occupied by Japanese forces.

Anti-Saloon League.—Bishop Cushman was re-elected president of the Anti-Saloon League in December 1940. The League, which once took pride in describing itself as “the

church in action,” is attempting to revive its prestige and its work in view of conditions imposed by the war. There is wide recognition of the increased dangers of intemperance, and there have been recent dry gains in Oklahoma, South Carolina, and elsewhere. But the League has not yet resumed the leadership of the churches, not even of the Methodist churches.

The African Methodist Episcopal Church is an unmerged branch of Methodism. It is the largest of three Negro Methodist bodies which together have nearly 1,500,000 members. Its 31st general conference was held in Detroit, May 1-15, 1941. It has 15 bishops presiding over 16 episcopal districts which are divided into 108 annual conferences.

BAPTISTS CHURCHES

The Northern Baptist Convention, meeting at Wichita, Kan. in May, listened with appreciation to Stanley Jones in an address against American participation in the war, shelved a resolution denouncing all war as “leading the world into moral, spiritual and economic bankruptcy,” and adopted a resolution disapproving totalitarianism, praising the President for keeping the country out of war and for giving aid to the embattled democracies, and calling on him to “use every influence at his command to mediate a just and lasting peace.” The Convention also voted to raise \$600,000 for service in the camps, to uphold the rights of conscientious objectors, and to oppose the appointment of a successor to Myron C. Taylor as ambassador to the Vatican.

The Southern Baptists, through their Home Missions Board with headquarters at Atlanta, undertook to raise \$300,000 for service in the camps. A superintendent of camp work has been appointed who will co-operate with Baptist chaplains and with neighboring churches.

Negro Baptists held the 61st annual meeting of the National Baptist Convention at Cleveland in September, with 7,000 delegates representing 3,500,000 members of 44,000 churches.

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The 1942 session will be at Memphis in September. There were also regional meetings in Atlanta and San Antonio. A Young People's Congress, which is a "school of methods," was held at Houston, Tex. in June and will meet next June in Atlanta.

PRESBYTERIAN CHURCHES

War and Defense Activities.—

The Presbyterian Church in the U. S. A. engaged in many activities related to the war in Europe and American defense. It enlarged its new United World Emergency Fund Committee and authorized it to raise \$750,000 before June 1, 1942 for emergency aid to foreign missions, China relief, evangelical churches in Europe, Christian refugees and similar causes. A Presbyterian Emergency Commission was also established, through which the church is assisting chaplains and churches in the vicinity of training camps and national defense industrial areas in caring for the spiritual needs of men in the nation's service.

Union and Cooperation.—The church took additional steps toward early cooperation and eventual organic union with other churches. There were continued formal negotiations with the Protestant Episcopal Church and with the Presbyterian Church in the U. S. (Southern). Committees of the two Presbyterian churches are formulating plans by which all the foreign and home missionary and educational work of the two shall be coordinated and, where possible, unified.

Domestic and Foreign Work.—A comprehensive work at home and abroad was carried on by the church and its 8,733 local congregations. The 2,013,247 communicant members contributed \$42,200,443 for all causes during the year ended March 31, 1941, as reported by the Stated Clerk of the General Assembly, Rev. William Barrow Pugh. This is more than for any year since 1932. Of this sum, \$5,169,177 was for the official benevolence agencies of the church. Missionary work is done in all parts of the United States and in 16 foreign

countries. In the United States, 64 colleges and theological seminaries are maintained. Pensions are provided for ministers and other workers. The church cooperates in interdenominational activities throughout America and in all the world.

General Assembly.—The 153rd annual General Assembly, St. Louis, May 22-28, 1941, elected Rev. Herbert Booth Smith of Los Angeles as Moderator. The 154th General Assembly will meet in Milwaukee, May 21, 1942.

The Presbyterian Church in the United States (miscalled "Southern" for identification) held its 81st annual General Assembly at Montreat, N. C., in May. Charles E. Diehl, president of Southwestern Theological Seminary, was elected moderator. A notable action was the Assembly's vote to re-enter the Federal Council of Churches of Christ, from which it withdrew ten years ago. It was voted to continue the committee on union with the Presbyterian Church in the U. S. A. The committee on social and moral welfare was instructed to look after the interests of conscientious objectors. The General Assembly of 1942 will be held at Knoxville, Tenn. The church experienced during the year, and summarily disposed of, its only heresy trial in recent times. Prof. E. T. Thompson of Union Theological Seminary, Richmond, having been cleared by his presbytery of a charge of holding views of inspiration inconsistent with Presbyterian standards, the case was brought before the General Assembly and rejected. A suit has been filed in the U. S. District Court at Greensboro, N. C., to recover stock in the Vick Chemical Co. now valued at \$1,600,000, claimed to have been left by will for the missions and benevolences of the church.

The United Presbyterian Church, at its 83rd annual General Assembly at Indianapolis in May, elected Rev. R. L. Lanning as Moderator. This church maintains six colleges and the Pittsburgh-Xenia Theological Seminary. Its 188,131 communicants contributed \$4,323,048 for local and mis-

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sionary work during the year, or the very high average of \$22.98 per member.

DISCIPLES OF CHRIST

The annual International Convention of Disciples of Christ, a mass meeting with 6,000 in attendance, met in St. Louis, May 1-7. It denounced war as "antagonistic to the spirit of Christ" and voted (2-to-1) to urge the President to keep America out of war. It repealed its 1936 action severing relations with the Federal Council's chaplaincy committee as a token of disapproval of the military chaplaincy. Large numbers of delegates deserted the convention one evening to hear Lindbergh. The churches and their agencies have accepted the responsibility of meeting the needs imposed by the war. Good progress has been made toward raising a \$1,000,000 emergency fund, to be completed by June 1, 1942, to retire an old debt on the United Christian Missionary Society, to meet emergency needs at home and abroad, and to finance special service to the men in uniform. The 1942 convention is (at present) scheduled to be held in August at Oakland, Calif.

The Disciples of Christ are reported as having a world membership of 1,834,562, as of June 30, 1941, a gain of 5,106 for the year. Of these, 1,671,966 are in the United States and Canada. Their total contributions for local church maintenance during the 12 months ended with the above date were \$11,839,565, a gain of \$774,279, and for missions and benevolences \$4,259,026, a gain of \$214,376.

REFORMED CHURCHES

Reformed Church in America.—

The 135th regular session of the General Synod of the Reformed Church in America was held June 5-10 at Holland, Mich. Rev. Simon Blocker was chosen as president for the ensuing year. The church has 725 congregations, 870 ministers, and a communicant membership of 163,115. Offerings for denominational benevolences were \$669,733; for other benev-

olences, \$141,414; for local church expenses, \$3,318,709; \$45,000 was contributed for relief purposes. Outstanding events of the year were the 75th anniversary of Hope College, celebrated with a historical pageant, and a visit by Crown Princess Juliana of the Netherlands, in whose honor Hope College held a convocation for the purpose of conferring upon her the degree of LL.D.

The Christian Reformed Church, with a membership of 121,755, is composed chiefly of persons of Dutch descent. It publishes papers in English and Dutch, but English is the language of the services in practically all of its 300 churches. Missions are maintained in China, Africa, and South America and among the Navajo and Zuñi Indians. During the year a mission in Nigeria was taken over. Headquarters of the denomination are at Grand Rapids, Mich., where it supports Calvin College (founded 1876) and Calvin Seminary. It adheres to the Heidelberg Catechism, the Belgic Confession, and the Canons of Dort.

FRIENDS AND MENNONITES

The Quakers, as usual, have taken the lead in relief activities, but with them the Mennonites should be named. The American Friends Service Committee has been working steadily in unoccupied France, feeding 50,000 children and assisting refugees. American Friends have appropriated \$10,000 a month for British relief. Their leadership in the maintenance and administration of work camps for war-resisters has already been mentioned. The "Wider Quaker Fellowship" has an enrollment of persons who wish to have association with the Friends without severing the ties with their own churches.

The strongly pacifist Mennonites not only furnish more war-resisters than any other two denominations but show a very high per capita rate of giving and working for all forms of relief—a fact that is the more notable since they are not, like the Friends, a channel for giving by others. Relief work has been done in

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France, Poland, and Germany. Missions are supported in India, Africa, and South America. The annual meeting of the Mennonite Board of Missions and Charities was held near Yoder, Kan., May 18-21, and the Mennonite General Conference at Wellman, Ia., Aug. 26-29. Seven work camps for conscientious objectors are maintained and directed by Mennonites.

UNITARIANS AND UNIVERSALISTS

The 116th annual meeting of the American Unitarian Association convened in Boston in May under the chairmanship, for the first time, of a woman—Dr. Aurelia Reinhardt, moderator of the Association and president of Mills College. A meeting of the Unitarian Fellowship for Social Justice, at Pittsburgh in October, in connection with a conference of the Association, revealed varied attitudes toward war but united support for relief work. The Unitarian Service Committee has rendered notable service in its work for refugees in France and at Lisbon, and in medical and educational projects in internment camps in France. The denomination's five national organizations are this year, for the first time, merging their fund-raising operations in a United Unitarian Appeal, with promise of good results. The feeling is that there has been a definite quickening of the spirit of the group. Its adult membership numbers 63,659; its constituency, including children, etc., 144,598.

At the 50th biennial Universalist Convention, at Tufts College in September, the general superintendent, Dr. Robert Cummins, urged the church to seek admission to the Federal Council. During the year the Universalists observed the 200th anniversary of the birth of John Murray.

CHRISTIAN SCIENTISTS

No statistics of the number of Christian Science members are given out, but it is officially reported that there are 2,862 recognized branches

of the Mother Church (76 per cent in U. S.) and nearly 11,000 practitioners engaged exclusively in Christian Science healing work. The denomination has been allotted eight chaplains in the army. Christian Science Camp Welfare Work has been organized, with 65 workers (Dec. 1). During the year ended Oct. 1, 1941, war relief committees sent to Great Britain over 4,400 cases of clothing, valued at \$700,000, besides 10,000 pounds of clothing to Finland (before she joined Germany in the war). Gift packages were sent to prisoners of war in Germany through the facilities of the Red Cross.

ADVENTISTS

The General Conference of Seventh-Day Adventists publishes annually a statistical report of extraordinary completeness to the close of the calendar year. The latest figures available are therefore those of Dec. 31, 1940. It shows that work was conducted "in 412 countries, islands and island groups, by 29,816 evangelists and institutional laborers, who were using 824 languages and modes of speech." Membership in all lands is given as 504,752; in North America, 185,788. Total membership has been multiplied by five since 1912. The total of funds received in 1940 was \$14,226,329, or \$28.18 per capita. More than half of the amount is credited to tithes. Adventists are remarkable for their missionary and evangelistic zeal and for their wide distribution over the globe. It would be safe to say that no other Protestant body has considerable numbers of adherents in so many fields. With reference to war work, they are pacifists, but few of them appear to be registered in the work camps. It is reported that they have put 4,000 young men and women through a short course to form a "medical cadet corps," with stretcher drill and training in first aid and defense against chemical warfare.

ASSEMBLIES OF GOD

The General Council of the Assemblies of God was organized at Hot Springs, Ark., in 1914. As of July 31,

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1941, it reports 4,159 ordained ministers, 4,348 assemblies, and 209,549 members. All these figures are more than double those of ten years ago. Missions are conducted in 43 countries. The amount given for home and foreign missions is reported as \$1,203,-

672 for the two-year period ended July 31, 1941. This is a somewhat loosely affiliated group of Pentecostal churches, much of whose work, both local and foreign, probably does not pass through the channels of the central organization.

INTERDENOMINATIONAL ACTIVITIES

BY PRESTON KING SHELDON
EDITOR AND WRITER

NORTH AMERICAN COUNCIL

With mingled feelings engendered by the onset of war in the Pacific in December, 1941, Protestant church officials at Atlantic City within a week were resigning themselves to the necessity of greater effort to eliminate dividing lines. A conference on co-operation of interdenominational agencies had been called, following two years of preparation for effecting closer relations among the major Protestant bodies. The date of its opening (Dec. 9) followed by two days the Pearl Harbor, Hawaii attack. The conference grew out of a preliminary study by several Protestant agencies which resulted in the appointing of an official committee to make a more detailed study of the organizations and their work and particularly to take into consideration the possibility of uniting their responsibilities. The conference was called with 25 officially appointed representatives of each agency.

The conference brought together (Dec. 9-11) 170 official delegates from the following bodies: Federal Council of the Churches of Christ in America, International Council of Religious Education, Home Missions Council, Foreign Missions Conference of North America, Council of Church Boards of Education, Missionary Education Movement of the United States and Canada, United Stewardship Council, and National Council of Church Women. Representatives were present also from State and City Councils of Churches.

After due deliberation on four pro-

posals submitted by the official committee, the delegates approved an immediate start toward organizing a council of churches to cover North America. Voting to "approve in principle the creation of a more inclusive cooperative organization which will provide for the continued, expanded, and more effective coordination and integration of our respective councils," the delegates authorized a special committee to carry forward the plan, if approved in 1942 by the respective bodies concerned, and report back to the agencies not later than Dec. 1, 1942.

Reports from the conference disclosed that the minds of the delegates were fully aware of the serious crisis thrust upon the United States as a whole. Its recommendation insisted "that the Councils proceed at once to the necessary steps for further co-operation through the organization of such joint service departments as may be found feasible." In recognition of the crisis, in addition to the purpose for which it was convened it sent a message to President Roosevelt and the following to all its members:

"The Conference on Cooperation of Interdenominational Agencies, meeting at Atlantic City, Dec. 9-11, has sent to President Roosevelt this message: 'The Conference on Cooperation of Interdenominational Agencies assures you of its sympathy and loyalty and of its prayers for wisdom and guidance.'

"In the crisis that confronts civilization today a divided Christian witness and a divided Christian ministry

INTERDENOMINATIONAL ACTIVITIES

are not enough. The desperate need of the modern world calls for a new effort to order the churches' forces in the most effective way, and for the reinforcing of each by the strength of all.

"Especially do we urge the churches in this emergency to effect a united ministry in camp areas and defense communities; to provide relief for those suffering from the ravages of war; to maintain unbroken the Christian fellowship and the Christian ministry around the world; and to inspire their members to fulfill their duties as Christians and as citizens, without bitterness or rancor, with courage and steadfast faith in God."

The committee calling the conference was formed in April, 1941, with Dean Luther A. Weigle of Yale University Divinity School as chairman and H. N. Morse of the Presbyterian Board of National Missions as secretary. An analysis of the extent and variety of Protestant interdenominational organizations in America had revealed to them the existence of 66 state-wide councils of various types in 42 states, about 200 city or county councils, at least 1,300 local ministerial associations, and six regional organizations. The eight general interdenominational agencies concerned in the conference at Atlantic City, of which some are active in Canada as well as in the United States, were found to represent a total of 67 denominations in the two countries. Of these, 38 were affiliated with one or two of the agencies only. Twenty denominations were affiliated with five or more, and these had a total communicant enrollment of more than 25,000,000.

The intercouncil joint activities found to be operating were taken as sufficient evidence of common interests that could best be served by cooperative effort. The committee based its case for closer relationships among the participating agencies on these considerations: "as an essential step in creating an integrated cooperative movement for the service of the churches; as a recognition of the essential interrelatedness of the functions and interests of these

agencies; as a practical measure for increased efficiency in operation; and as a dramatic and convincing demonstration of the churches' desire for united action in this time of crisis."

In its deliberations the conference had accepted the committee's proposal that a single corporate agency succeed all the existing councils and continue and extend all their interests and functions. This was one of four presented and embraced the most far reaching scope. The conference action in reality began to crystallize, under critical circumstances, activities growing out of more than a quarter of a century's evolving program of interdenominational cooperation.

UNITED COUNCIL OF CHURCH WOMEN

Immediately following the sessions of the Conference on Cooperation of Interdenominational Agencies at Atlantic City, about 100 officially named delegates of three women's national church groups met in Atlantic City and organized the United Council of Church Women. The groups sending delegates were women of the Foreign Missions Conference of North America, women of the Home Missions Council, and the National Council of Church Women. These had for several years conducted projects through the National Committee of Church Women. Representatives of the three groups met Dec. 11-13 and elected vice-presidents, a recording secretary, and a treasurer, leaving the office of president to be filled later. The elected officers were: vice-presidents, first, Miss Amy Welcher, Congregational-Christian, Hartford, Conn.; second, Mrs. Robert McLean, Presbyterian Church in the U.S.A., Santa Barbara, Calif.; third, Mrs. Christine Smith, African Methodist Episcopal, Detroit, Mich.; at large, Mrs. I. J. Ayres, Methodist, El Paso, Tex.; Mrs. Andrew Dale, Presbyterian Church in the U.S., Columbia, Tenn.; Mrs. E. H. Gebert, Longview, Wash.; Mrs. E. L. Eggers, Northern Baptist, Hammond, Ind.; Miss Mary C. Smith, Protestant Episcopal, Minneapolis, Minn.; and Mrs. Virgil Sease, United Lutheran,

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New Brunswick, N.J.; recording secretary, Mrs. Fred H. White, Disciples, Buffalo, N.Y., and treasurer, Miss Henrietta Gibson, Methodist, Albany, N.Y.

According to the constitution adopted, the work of the United Council was to be carried out through three major departments: program, including current activities such as a World Day of Prayer, with new interests; field organization, responsible for counsel to local and state interdenominational groups of church women and for organizing new groups; promotion and publicity.

Significantly the delegates organizing the new body adopted a resolution renewing the religious objectives which originally had motivated their deliberations. The resolution said that, though "meeting at the hour of our country's involvement in war and at the time of the world's greatest tragedy," the women members of the constituting convention of the new women's united council "still believe individually and collectively that God reigns and that ultimately His will will prevail. In deep penitence for our share in the world's guilt and woe, we call upon the women of the churches to enter with us into the suffering and sacrifices of the human family,—to combat the rising tide of hatred caused by war; to minister to those suffering from the ravages of war; to maintain and strengthen the Christian fellowship; to show friendship and understanding to the men and women in service for the defense of our country; to maintain the integrity of the home; to continue to its fullest degree the on-going ministry of the Church, even to the uttermost parts of the earth; to consecrate ourselves to the task of building a democracy at home which recognizes individual worth and strives for justice to all people; and finally, to dedicate ourselves to the task of demanding of our country that it assume its full responsibility in the days to come in helping to build a world order based on love and justice without which there can be no durable peace."

In a telegram to President Roosevelt the delegates also pledged in behalf of the new United Council of Church Women, "its loyalty to the highest ideals of our nation in this hour of grave crisis and assures you of its prayers for wisdom, strength, and divine guidance as you carry your heavy responsibilities." The telegram said the council represented 10,000,000 women of 70 communions.

ORGANIZATION OF FEDERAL COUNCIL WOMEN

The step taken by the women at Atlantic City followed by little more than a year the issuing by the Federal Council of the Churches of Christ in America of a pamphlet covering a study of "Woman's Status in Protestant Churches." This pamphlet, one of the annual series in the Council's information service, was published Nov. 16, 1940. The *Federal Council Bulletin*, published monthly, reported in its issue for March, 1941, that the status of women in church life was being widely discussed with the Nov. 16 pamphlet as a medium. The study itself had received notice in the secular press as well as in church periodicals. It was also used as the basis of radio broadcasts.

More specific interest, however, was being developed through a program of the Women's Cooperating Commission of the Federal Council of Churches, which organized on Oct. 6, 1941 in New York City, a meeting of women from many states for a day's consideration of services possible for women to perform. The findings of that day included duties with men in defense forces, understanding the positions of conscientious objectors, community problems, and an emphasis upon church women's responsibility for a new world. The times provided women with a "special opportunity" according to the findings, "to: 1. Form cells, or small groups for study and discussion of the questions underlying the bases of a just and durable peace; 2. Arouse ourselves and prepare other people for assuming the responsibilities of establishing such a peace."

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INCREASE IN LAY PARTICIPATION

In common with a trend among the major Protestant denominations which had already opened avenues of service in churches increasingly to the laity, the Federal Council of the Churches of Christ in America, began the year 1941 by permitting its constituent bodies to appoint additional members to the Federal Council, who must be lay men or lay women, but not exceeding one third of the number already provided. The resolution granting this privilege was adopted as an amendment to the Council's constitution, in December, 1940 at Atlantic City. The *Federal Council Bulletin* in February, 1941, noted "indications of increased interest in the movement for a larger participation of lay men and women."

Reviewing the meetings held in Atlantic City in December, 1940, with representatives of six other interdenominational groups, the *Federal Council Bulletin* also cited contributions made to interdenominational effort by John Foster Dulles, who forthwith was made chairman of the Council's new Commission to Study the Bases of a Just and Durable Peace. Mr. Dulles, a Presbyterian layman and an authority on international law, organized a group of about 100 men from pulpit and pew, including leaders in education, business, and labor. On Sept. 1, 1941, the Rev. Bradford S. Abernethy, pastor of the First Baptist Church, Columbia, Mo., left his pastorate and assumed his post as secretary of the commission. Dr. Walter W. Van Kirk was also a secretary.

In 1941 the Commission issued a handbook, "A Just and Durable Peace," followed by a memorandum from the Committee of Direction of the Commission and a third publication by Mr. Dulles, of "Long Range Peace Objectives," being an analysis of the Roosevelt-Churchill eight points. The memorandum contained, among other proposals, one for Congressional action to eliminate so far as possible some of the effects of any legislative action during interna-

tional crisis, taken without knowledge of its effect upon other peoples.

Study groups were started in local churches under the Commission's leadership. Conferences for one and two days were begun under the auspices of city and state councils of churches. A national conference was projected to be held in Delaware, O., March 3-5, 1942, under the auspices of the Commission and Ohio Wesleyan University.

FEDERAL COUNCIL'S 1941-42 PROGRAM

In October, 1941, the Federal Council of Churches announced its program plans, starting immediately, for a year's activity. The headings included evangelism and worship, national defense, international and ecumenical relations, public relations, social education and action, Christian unity, research, rural church ministry, mercy and relief, women's leadership in the church of today and tomorrow, national religious radio and field program and service.

Indicative of the more recent innovations in the Council's endeavors were regional institutes on religion and health held in 1941 in Chicago, Berkeley, Calif. and Los Angeles. The theme at Chicago was "Religion and Personality Integration" and at Los Angeles, "How Religion, Psychology and Medicine Can Cooperate to Serve Personality." Each institute took a week. In Chicago, the institute was held at the invitation of the University of Chicago, the Chicago Theological Seminary, and the Disciples' Divinity House, with the aid of the Federal Council's lately organized commission on religion and health and several mid-West councils of churches. The California meetings had theological schools and church federations as sponsors in addition to the Federal Council's commission.

The Industrial Division of the Federal Council instituted what it termed a "new conference" technique in church circles, to meet pressing problems for workers. It consisted in calling together selected employers, labor leaders, ministers and other

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church leaders, farmers, members of co-operative economic groups, men and women, Negro and white, without speeches, publicity, or the adopting of resolutions. The October, 1941 *Federal Council Bulletin* briefly commented, "It works."

RELIGIOUS RADIO PROGRAMS

A tabulation early in 1941, covering radio broadcast results over a period of 17½ years, disclosed that more than 5,000,000 letters had been received from listeners in that time by the Department of National Religious Radio. The letters came from members of all churches and from others. Copies of talks distributed ran to 1,874,670. More than 7,000 religious programs were presented, not including special features. Radio facilities were made available to 1,143 ministers and others. These speakers came from 279 cities, in 32 states and ten foreign countries. They represented 30 official religious bodies and 36 other religious organizations. Of the total speakers, 81 clergymen conducted programs in series. These programs were made possible through the generosity of the National Broadcasting Co. and numerous individuals and agencies. The tabulation was made in a report by Frank C. Goodman, executive secretary of the Department of National Religious Radio.

CONFERENCE OF JAPANESE AND AMERICAN CHRISTIANS

Misgivings over American-Japanese relations made themselves known in February, 1941 when 190 American missionaries in Japan cabled officers of the Federal Council of the Churches of Christ in America saying: "We face a crisis which threatens to destroy much that is of supreme value to Christians." The message urged "our fellow Christians in America to exert themselves anew to preserve unbroken the eighty years peace between the two nations." When this had been read, a conference of Federal Council officials was called to draft a reply, assuring the 190 missionaries that the Council and the Foreign Missions Conference of North

America were "continuously working for comprehensive settlement restoring peace in East Asia." The two continued to stimulate prayers for peace in response to a suggestion that this be done, received from the Japan National Christian Council which, with the Federal Council of Churches, had been in contact more than two years. A proposal of the Federal Council to send a deputation of Christian leaders from the United States to Japan for mutual counsel had been delayed because a number of Japanese Christians did not feel the time yet opportune. A renewed effort to have this done resulted in a cable from the Japan National Christian Council suggesting the conference take place somewhere on the Pacific Coast.

Accordingly nine Japanese Christian leaders and 17 from the United States met at the Riverside Mission Inn in California April 20 to 25, inclusive, for worship, prayer and consultation. The Japanese delegation included Toyohiko Kagawa and Bishop Yoshimune Abe, a Methodist who had been made chairman of a committee in charge of bringing together 34 Protestant bodies of Japan to form the United Church of Christ in Japan, which was effected in the spring of 1941. The Episcopalians and Seventh Day Adventists remained outside. The bishop became eventually presiding chairman of the new religious body's general conference and executive committee.

A report of the meeting in Riverside Mission Inn disclosed that the Japanese had said Christians from the United States and other countries would still have an important opportunity to help the new church body in Japan, though many had seen fit to return home. A new type of relationship was seen emerging between Japanese Christians and those from churches in the United States, in which it was desired to approach a new degree of mutuality. The Japanese appeared to want more intimate relations with the general agencies of American churches along with their mission boards. Later the Japanese

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stopped for two days with mission board executives in Atlantic City, and on May 14 met members of the advisory committee and the executive committee of the Federal Council in New York City, where they were guests at dinner.

The conference at Riverside was not authorized to adopt policies of commitment for churches in either country. A greeting, however, was sent to "our fellow Christians in all lands," which opened with the statement: "We have met under the cloud of conflict, destruction and fear that darkens the world" and closed with, "We have solemnly pledged to one another an abiding comradeship in prayer and earnestly invite our brothers and sisters in all lands to join this fellowship."

Before returning to Japan the deputation, which had been sent to the United States to represent the new united body of Japanese Christians, met informally with small groups of church leaders and visited national meetings of Protestants. Six of the delegation headed by Bishop Abe, returned to Japan in June. Toyohiko Kagawa, who in 1936 spent six months in the United States and Canada on a speaking tour arranged by the Federal Council of the Churches of Christ in America, the International Missionary Council and the Cooperative League of the United States, remained until the middle of August with his assistant, K. Ogawa, visiting cooperatives and renewing his appeal for building a better world through an application to economics of the principles of Christianity.

On their arrival in Japan the six Japanese Christians, led by Bishop Abe, wrote that the Japan National Committee on Christian Cooperation planned to correlate the work of the Christian communions and organizations still outside the United Church. "A strong effort will be made," they wrote, "to get the Greek and Roman Catholic Churches to become cooperating units of this committee, thus building a total Christian front in Japan. This National Committee will also tie up the Christian Movement

in Japan with Christian movements in other lands. This will be one of its specific functions. It will, among other things, give special attention to the strengthening of the ties of understanding and fellowship with the Christian movements of the United States and of China." And in one of the closing paragraphs the message said: "The world situation grows increasingly ominous. No matter what turn things may take, however, we shall always treasure the friendship and fellowship which made our conferences and contacts so delightful and meaningful."

WORLD COUNCIL PROGRAM

Departments of the ecumenical movement among Protestant churches were represented at a conference June 3-5 in Toronto, Canada, in furtherance of the projected program for a World Council of Churches. The conference was called by the Joint Committee of the American Sections of the Universal Christian Council for Life and Work and the World Conference on Faith and Order. Delegates attending discussions were aided by a syllabus on the relation of the churches to a world at war. The conference was opened with a series of statements on the prospects of progress in interdenominational work in North and South America. A luncheon was held on the opening day under the auspices of the Canadian Council of the World Alliance for International Friendship through the Churches.

The World Alliance held its annual meeting Nov. 9-11 in Rochester, N.Y. in cooperation with the Church Peace Union and a committee of local sponsors. The theme was "Religion in the World Crisis." Among the speakers was Dr. A. Maud Royden, the English preacher. At one of the sessions a presentation of urgent problems of relief for war victims was made by Dr. Adolf Keller, director of the Central Bureau for Interchurch Aid, who remained in the United States on a visit prolonged by the war in Europe. He had arrived in October 1940 and was to

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have left early in the spring of 1941 for his headquarters in Geneva. Other speakers on war relief problems were Chih Meng of the China Institute and Dr. Robert C. Dexter of the Unitarian Service Committee. An annual message was adopted pledging to continue the work of the Alliance "of bringing the churches and religious people in all nations, in all groups, into a working unity."

The Church Peace Union voted at its semi-annual meeting in June to make a basic part of its work the promotion among local churches of committees on world order. Following this, representatives of Protestant young people of the Christian Youth Council of North America adopted the forming of youth committees on world order as the major objective in the succeeding year. In support of these moves, the World Alliance for International Friendship through the churches editorially in its newsletter for September advocated organizing such committees as "a sound way to meet the democratic challenge of the eight points" (referring to the declaration of peace aims by President Roosevelt and Prime Minister Churchill).

The editorial, among other comments said "the eight points are a particular challenge to religious groups who long that the construction of peace may be grounded upon religion ideals." The editorial continued: "We need to have committees on world order set up in large churches and small, not all following the same pattern or having the same structure by any means, but all bent upon a common goal—to concentrate the thought, prayers, and action of religious folk upon the job of building religious ideals into the fabric of international life."

Following the attack by the Japanese on Pearl Harbor, the World Alliance, in its December newsletter, declared: "This war opens a new, and perhaps the most fateful, era in our history as a nation. There will be no faltering in the support of our government. . . . Great dangers threaten us, but the greatest danger

of all is that we may become hysterical, impatient, or over-confident . . . We must never lose faith in ultimate victory and the possibility of establishing a just and righteous peace."

Writing in October, 1941, to members of the Provisional Committee of the World Council of Churches, officers and staff members of the organizing body in Geneva, Switzerland, reported "that contacts are being maintained with most of the churches, that in the course of September and October, our secretaries are visiting church leaders in six countries, that (during the same period) two important ecumenical study-conferences are being held, that the spiritual aid to prisoners of war is extended to new categories, that the work of our press service touches wider circles than ever, that the spiritual and material help to refugees is maintained, and that our Geneva office has become the centre of large-scale Bible distribution (on behalf of the American Bible Society) to European countries."

In the *Federal Council Bulletin* for September, 1941, Dr. Adolf Keller, director of the Central Bureau for Interchurch Aid, wrote that his bureau in Geneva was "working in close cooperation with the World Council of Churches which is dealing with the spiritual welfare of prisoners of war, with Bible work and Christian refugees." He said the bureau represented "the relief arm of an ecumenically-minded Christianity."

A report from the Geneva Office of the Provisional Committee of the World Council of Churches, covering the first half of 1941, opened by saying: "The main impression which emerges from the kaleidoscopic events of ecumenical church life during the last six months is that in so many cases what seemed at first a great loss has proved to be a great gain. It is shown once more that the accounts of the Kingdom of God are kept in a very different way from those of the world.

"This becomes especially clear in the life of the churches under pressure," the report from Geneva con-

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tinued. "For several of them the conflict situation, which means the loss of many exterior privileges, has first of all meant that they have gone through an inner renewal. Many churches which were in an almost completely static condition have suddenly begun to live and to move. Obstacles to necessary reforms which had been considered insuperable are swept aside now that a truer sense of proportions has come. And what is specially remarkable, churches which did not speak out when there was no risk involved in doing so, have begun to speak out now that it is dangerous to do so. . . .

"Normal contacts may be broken off, but the precarious contacts which take their place are used to create a much deeper relationship than before."

The total of denominations accepting membership in the proposed World Council of Churches was increased to 75, which represented Christians in 27 countries. Based upon religious services held during the conference in June in Toronto, in the interest of the World Council, the American section of the Council urged continued prayer in 1942 for the success of the ecumenical movement. An increased interest in devotions conducted in the interest of a world unity in religion was noted in the United States in 1941 where many communities had such services.

NATIONAL CONFERENCE OF CHRISTIANS AND JEWS

Out of the annual sessions of the Institute of Human Relations, Wil-

liams College, Williamstown, Mass., Aug. 25-29, came a proposal by a psychiatrist, Dr. David M. Levy, endorsed by a Roman Catholic nun, Sister Mary de Lourdes, that "the idea of intolerance in the future must be looked upon, not merely as a matter of misguided emotion, but as a sickness to be treated with the same techniques as any other medical and health problem of the community." Sister Mary emphasized that prejudices are transmitted from adults to children "from seven months on." Wholesome human experience, she said, must be provided as wisely as proper nutrition and sanitation. The Institute was held under the auspices of the National Conference of Christians and Jews.

Dr. Everett R. Clinchy, president of the conference, accompanied by Father Vincent C. Donovan and Rabbi Morris Lazaron, flew in September to spend a month in England, Scotland, and Ireland, where they studied the effects of war on the churches, cooperation among Protestants, Roman Catholics and Jews, and current thinking about the post-war period. On their return they toured the United States, appearing before audiences in 45 leading cities. They said they had found an awakening spiritual life in Great Britain induced by war hardships and a "Dunkerque from materialism." Secularian barriers were disappearing. Dr. Clinchy said: "We heard expressed time after time a longing for ideas big enough to match post-war problems."

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BY CHARLES A. McMAHON
EDITOR, *Catholic Action*

NATIONAL CATHOLIC WELFARE CONFERENCE

Many of the activities of the Church in the United States clear through the National Catholic Welfare Conference, official agency of the

Archbishops and Bishops of the country. Membership in the N.C.W.C. includes every Bishop of the Church in the United States and its territories and possessions. Outside the annual meeting of the Hierarchy, usually

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held in November of each year, the work is carried on through the Administrative Board of the Conference and episcopal committees appointed by the general body.

It should be recalled that the incorporated purposes of the N.C.W.C. are "unifying, coordinating and organizing the Catholic people of the United States in works of education, social welfare, immigrant aid and other activities." Thus, the N.C.W.C. serves as a central clearing house of information and assistance in a great variety of Catholic interests through the maintenance of its several departments and bureaus, the listing of which indicates their scope and fields of interests: Executive, Youth, Education, Press, Social Action, Legal, Lay Organizations (National Council of Catholic Men, National Council of Catholic Women), and Catholic Action Study.

The Executive Department maintains Bureaus as follows: Immigration, the National Center of Confraternity of Christian Doctrine, Family Life, Information, Publications, Business and Auditing. This department is also responsible for the publication of *Catholic Action*, monthly publication of the N.C.W.C. The Education Department maintains bureaus as follows: Health, Library Service, Statistics and Information, Teachers' Registration. The Social Action Department has a separate division, Rural Life Bureau. The Catholic Conference on Industrial Problems, and the Catholic Association for International Peace, although not under the N.C.W.C., function largely under this department.

Each year, in November, there is submitted to a general meeting of the American Hierarchy by the Administrative Bishops of the N.C.W.C. reports of activities for the previous year. At this general meeting are elected the members of the N.C.W.C. Administrative Board, deputed by the general body to carry out its wishes for the coming year.

At the 1941 general meeting, held in Washington, Nov. 12-13, attended by 111 members of the Hierarchy, the

following Archbishops and Bishops were elected to serve as members of the N.C.W.C. Administrative Board: Most Rev. Edward Mooney, Archbishop of Detroit, chairman of the Administrative Board and episcopal chairman of the Executive Department; Most Rev. Samuel A. Stritch, Archbishop of Chicago, vice chairman of the Administrative Board and treasurer; Most Rev. Francis Spellman, Archbishop of New York, secretary of the Administrative Board; Most Rev. John J. McNicholas, O.P., Archbishop of Cincinnati, episcopal chairman of the Department of Education; Most Rev. John Gregory Murray, Archbishop of St. Paul, episcopal chairman, Department of Catholic Action Study; Most Rev. John F. Noll, Bishop of Fort Wayne, episcopal chairman of the Department of Lay Organizations; Most Rev. Hugh C. Boyle, Bishop of Pittsburgh, episcopal chairman of the Legal Department; Most Rev. Edwin V. O'Hara, Bishop of Kansas City and episcopal chairman of the Social Action Department; Most Rev. John Mark Gannon, Bishop of Erie, episcopal chairman of the Press Department; and the Most Rev. John A. Duffy, Bishop of Buffalo, episcopal chairman of the Department of Youth.

Active coordinating officials were later selected by the board as follows: Right Rev. Msgr. Michael J. Ready, general secretary, and Rev. Howard J. Carroll, S.T.D., assistant general secretary.

The general meeting authorized the continuance of the following episcopal committees: Confraternity of Christian Doctrine, Committee on Motion Pictures, Committee for Catholic Refugees, Committee on the Mexican Seminary, American Board of Catholic Missions, National Organization for Decent Literature, Special Committee for the Celebration of Pope Pius XII's Twenty-fifth episcopal anniversary, and Committee on Pope Pius XII's Peace Plan.

Through the above-mentioned departments, bureaus and committees, the Administrative Board of the N.C.W.C. executes such mandates

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and commissions as may be given to it by the general body of the Bishops.

OUTSTANDING ACTIVITIES OF THE CONFERENCE

Some of the outstanding activities of the Conference reported at the 1941 general meeting were: the issuance of a statement on the "Crisis of Christianity" in which the Administrative Board, speaking for the Hierarchy, comments upon the gravity of the times and condemns Nazi and Communistic subversive forces; the appointment of a committee to promote the study and widespread publication of Pope Pius XII's peace plan; authorization of a single relief collection during 1942 for war-stricken peoples; plans for the celebration of Pope Pius XII's twenty-fifth episcopal anniversary; a strong recommendation for the necessity of strong diocesan units of the Legion of Decency to implement the work of that office for wholesome motion pictures.

Other important matters receiving the consideration of the general meeting were: Catholic cooperation in the national defense program and safeguarding of the interests of its institutions throughout the communities; attention to the problem of inter-American relations as they affect education; and extension of the effort to spread in the United States Catholic social teaching as set forth in Papal Encyclicals. The N.C.W.C. News Service reported a net increase of sixteen subscribers in the last fiscal year in announcing the installation in May of Noticias Catolicas, a special Spanish news service for Latin America. The N.C.W.C. News Service is now servicing 158 clients in 31 countries.

NATIONAL COUNCILS OF CATHOLIC MEN AND WOMEN

Growing interest in the Catholic Hour broadcast of the National Council of Catholic Men is evidenced in the receipt of 2,500,000 pieces of mail, and the distribution of more than 226,000 pamphlets containing copies of Catholic Hour addresses

was reported by the National Council of Catholic Men.

Both the National Councils of Catholic Men and Women rendered valuable aid to the promotion of the programs of the National Catholic Community Service, a constituent group of the United Service Organizations. The National Council of Catholic Women, now organized in 65 dioceses, includes among its affiliates 17 national, seven state, and 3,469 local organizations. Its fifth annual "Call to Youth" radio series resulted in the award of certificates to sponsors in 24 dioceses. Expansion of the activities of the National Catholic School of Social Service, the one national project assumed by the N.C.C.W., was also reported.

COOPERATION IN NATIONAL DEFENSE

With the national emergency doubling the demand for the services of the Legal Department, Most Rev. Hugh C. Boyle, Bishop of Pittsburgh and episcopal chairman of the Legal Department, in his report, stated that in two important ways the Department has been active in the national defense program. Cooperation of the Department with Catholic institutions in the matter of meeting difficulties presented by priorities allocation made necessary by the National Defense Act was accorded; also close cooperation with and rendering of assistance by the Legal Department to the National Catholic Community Service.

CATHOLIC YOUTH ORGANIZATIONS

The Catholic Youth Bureau of the N.C.W.C. was raised in 1941 to the status of a fullfledged N.C.W.C. Department and assigned three major objectives in the course of the year. The major objectives of the Department are to facilitate exchange of information on youth work; to promote the National Catholic Youth Council as the Federating agency for all approved Catholic youth groups; to contact and evaluate other national youth groups and agencies.

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The National Catholic Youth Council has gained ground in most dioceses, and the framework for the coordination of all Catholic youth work in this country has been considerably strengthened. Close contact has been maintained with leaders of specialized Catholic Action groups.

REFUGEE PROBLEMS

The extension of Nazi domination in Europe, coupled with the frequently changing immigration regulations of the United States because of the shifting of war conditions, placed unprecedented burdens upon the N.C.W.C. Bureau of Immigration.

"The spread of Nazi control," the report said, "created additional refugees and increased the fears of those residing outside of the controlled areas. As a result, the appeals for our Bureau's aid from refugees and their friends were more numerous and of greater urgency than ever before."

The International Catholic Office for Refugee Affairs was merged with the Catholic Committee for Refugees, with Archbishop Joseph F. Rummel, of New Orleans, as chairman also of the new group. It was reported that American Catholic Bishops had contributed \$50,000 to the Commission for Polish Relief. The Bishops' Committee presented \$5,000 to the American Red Cross for the relief of suffering in China, and in August announced that funds totalling \$245,000 had been allocated, of which \$93,000 was to be sent abroad for relief, and \$152,000 expended in this country on refugee and war relief.

Through the Vatican's Office of Information on War Prisoners, the Pope labored to reunite, at least by the re-establishment of communication, war prisoners and their families; engaged in enormous activity to bring relief to the victims of the war; distributed sums through Church representatives in various countries for aid to the needy and impoverished; instructed Papal representatives in all war-torn countries to visit prisoners. The voice of the Holy Father was lifted again and again throughout the year urging the establishment of a just peace.

CONFRATERNITY PROGRAM

The Confraternity of Christian Doctrine has directors officiating in 17 Archdioceses and 87 Dioceses. During the year, the Bureau of the Confraternity continued to report the establishment of parish units and to develop religious instruction programs for Catholics outside the Catholic school system. The Confraternity program was presented through national, regional, and diocesan congresses, the press and the radio.

MISCELLANEOUS ACTIVITIES OF N. C. W. C.

Especial emphasis was placed on adult religious education and programs for the religious instruction of Mexicans, Negroes, special groups, and Catholics in public institutions.

An encouragingly increasing interest in the Papal Encyclicals, especially in *Rerum Novarum* and *Quadragesimo Anno*, was indicated in the requests for such documents from the N.C.W.C. Business and Publications Office.

Catholic Action, monthly publication of the N.C.W.C., the report added, entered its twenty-third volume and marked another increase in circulation. A regular feature of *Catholic Action* in the last year was a series of study outlines on the general topic "We Catholics and Our Country."

In a report submitted to Archbishop Mooney, president of the Board of Trustees of the National Catholic Community Service, by Rt. Rev. Msgr. Michael J. Ready, general secretary of the National Catholic Welfare Conference and secretary of the N.C.C.S. Board of Trustees, contributions made by the Archbishops and Bishops of the United States and by Catholic chaplains of the armed forces to the success of both the National Catholic Community Service and the U.S.O. were cited for special praise.

Archbishop Edward Mooney, of Detroit, chairman of the Administrative Board of the N.C.W.C., officiated at the laying of the cornerstone of the new N.C.W.C. headquarters

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building at 1312 Massachusetts Avenue, N. W., in Washington, and the headquarters staff moved into the new building toward the close of the year. A competition for a statue of Christ, the Light of the World, to be erected in the façade of the new building, was conducted by the Liturgical Arts Society on commission of the N.C.W.C. Board.

WAR AND DEFENSE MATTERS

Mention was made of the "more accurate and more useful" figures that may be obtained through the recently approved War Department arrangement whereby the soldier's religious preference will be noted on his service record at the time of his induction.

The cooperation of the chaplains "has been and will continue to be a most important factor" in the success of the N.C.C.S., Monsignor Ready stated. As of Oct. 27, 1941 there were in the Army 1,571 chaplains, of whom 391 were Catholic priests. About 31 per cent of the total number of Navy chaplains are Catholic priests.

"Both of the Chief of Chaplains of the Army, Very Rev. Msgr. William R. Arnold, and Chief of Chaplains of the Navy, Rev. Robert D. Workman, have at all times given N.C.C.S. every assistance within their power," the report stated.

The Bishops of the country have cooperated in many ways with the N.C.C.S. and suggestions and recommendations have met with gratifying acceptance.

"It should also be recorded," Monsignor Ready stated, "that throughout the country the U.S.O. campaign for funds received the approbation and support of numerous members of the Hierarchy, to whom is due no small measure of credit for its success. In many instances they enlisted the interest and cooperation of their people by pastoral letters."

Inspired by the pledge of loyalty and support in the emergency given by the special Bishops' Committee to promote the Holy Father's Five-Point Peace Program, Catholics of the United States indefatigably en-

tered into the wartime defense activities. Colleges rearranged curricula to graduate ahead of time seniors liable to war service; lay organizations went into action in the field of war service; Ordinaries issued regulations on church ceremonies to bring Catholic religious practice within the confines of air-raid defense regulations.

A survey disclosed that more than 1,200 American Catholic missionaries are laboring in the Pacific war areas. In September a War Department tabulation estimated that 31 per cent of the army personnel is Catholic. August figures revealed the complement of army chaplains to be 1,449, of which 362 are Catholics. The first of the 604 chapels planned by the Government was opened at Arlington Cantonment in Virginia, and one of the principal addresses was delivered by the Rt. Rev. Msgr. William R. Arnold, chief of army chaplains, who toward the end of the year was elevated to the rank of Brigadier General. It was reported in November that attendance at 118,990 religious services in the Army in the course of the year was 11,640,000. The Military Ordinariate expanded its personnel to meet the demands of providing spiritual assistance for more than 400,000 men in the armed forces. Eight Vicar Delegates were named, six of whom were chaplains in the first World War.

CATHOLIC POPULATION

The Official Catholic Directory for 1942 gave 22,293,101 as the total Catholic population of the United States, Alaska, and the Hawaiian Islands, an increase of 339,965 over the previous year. There were 35,839 priests, diocesan and regular; 152,159 professed Sisters, and 7,762 professed Brothers. The Colored Catholic population was estimated at 296,988, an increase of 93,002 in a decade.

PAPAL THANKS FOR SUPPORT

In a message to the Hierarchy read at its annual meeting in Washington by the Most Rev. Amleto Giovanni Cicognani, Apostolic Delegate to the United States, Pope Pius XII

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thanked the Bishops and the American clergy and people for upholding his hands in his paternal efforts to bring relief to the suffering peoples throughout the world. The Apostolic Delegate, speaking at the Congress of the Confraternity of Christian Doctrine in Philadelphia, referred to the revision of the New Testament and of the Baltimore Catechism completed during the year as "the twofold gift of the Hierarchy to the Faithful."

DIOCESAN CHANGES

The Apostolic Delegate announced the establishment of a new Ecclesiastical Province—Denver—and the creation of two new dioceses—Honolulu and Pueblo. These changes brought the total of Ecclesiastical Provinces in the United States to 20.

Two Bishops were made Archbishops and seven priests elevated to the Episcopate. Bishop Robert E. Lucey became Archbishop of San Antonio and Bishop Urban J. Vehr Archbishop of Denver. Rt. Rev. Msgr. James Joseph Sweeney, of San Francisco, became Bishop of Honolulu; Rt. Rev. Msgr. Joseph C. Willging, of Helena, Bishop of Pueblo; Rev. Laurence J. FitzSimon, of San Antonio, Bishop of Amarillo; Rev. Francis J. Magner, of Chicago, Bishop of Marquette; Rev. Peter Bartholome, of Rochester, Minn., Coadjutor of St. Cloud; Rt. Rev. Msgr. Joseph T. McGucken, of Los Angeles, Auxiliary of Los Angeles, and Rt. Rev. Msgr. Edward G. Hettinger, of Columbus, Auxiliary of Columbus.

Two members of the Episcopate died—the Most Rev. Theodore H. Reverman, fourth Bishop of Superior, on July 17, and Most Rev. Vincent Wehrle, O. S. B., retired Bishop of Bismarck, on Nov. 1.

COMMUNITY SERVICE

Opening of USO clubs operated by the National Catholic Community Service came in rapid succession, and by the end of the year there were 80 such clubs in military and naval areas, with field personnel making

arrangements for the opening of 30 more clubs by Jan. 1, 1942. Under the direction of the N.C.C.S. Women's Division there were 15 centers in operation, with plans for the opening of 10 more by Jan. 1. Other N.C.C.S. clubs were operating under local auspices with local funds. There were 194 staff workers in the field.

THE CHURCH AND THE PUBLIC

Emphasis on religious liberty, faith in God and religion, and the necessity of spiritual principles in solving the world's difficulties characterized utterances of President Roosevelt. A Bishop, a Monsignor, and a priest had official parts in three of the most important ceremonies attendant upon Mr. Roosevelt's third inauguration as President on Jan. 20, 1941. Upon his return to this country after his visit to the Holy Father, Myron C. Taylor, President Roosevelt's personal representative at the Vatican, called the Pope and the President the "two symbols of civilization at its best." La Salle College, Philadelphia bestowed the "Peace Medal" of the American Congress for Peace and Social Security upon the President. Catholics took a leading part in the observance of the 150th anniversary of the Bill of Rights.

EDUCATION

Three new Catholic colleges were established—Gannon College in Erie, named for Bishop Gannon; Mercy College in Detroit; and Barry College in Miami, Fla., named for the late Bishop Barry. The new \$3,000,000 Cardinal Hayes Memorial High School in New York was formally opened. The five Summer Schools of Catholic Action drew an attendance of 6,643. A total of 132 inter-American scholarships were awarded last school year and 109 new scholarships were to be awarded for the coming year by 144 Catholic institutions of higher learning. Various favorable state rulings and legislation were concerned with free public bus transportation for parochial school students and religious education for public school children.

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SOCIAL ENCYCLICALS

Observances commemorating the anniversaries of the great Social Encyclicals were held throughout the country in May, among them being an Industrial Conference in Chicago sponsored by the N.C.W.C. Social Action Department; a High Mass in St. Patrick's Cathedral in New York; a Social Action Conference in Kansas City, sponsored by the N.C.W.C. Social Action Department and Rockhurst College; mass meetings in several cities, radio programs, forums, college observances, sermons, and dramatizations. Thousands of copies of the Encyclicals were distributed.

MISSIONS

America was the principal, if not the only source, of support for the missions. The Catholic Students' Mission Crusade reported that some 4,250 Americans were engaged as Catholic missionaries at home and abroad. The Jesuit Philippine Bureau reported it had sent supplies to the Philippine missions amounting to \$80,000 in five years. On the home front, it was reported at the annual meeting of the American Board of Catholic Missions that nearly \$500,000 was distributed by the Board among 65 mission dioceses in the United States in 1940, while the Catholic Church Extension Society received and expended in its last fiscal year more than \$1,000,000.

The number of native clergy in all Catholic missions is now 7,000, including 42 native Bishops. Forty-seven missions are entrusted to native clergy.

DIPLOMATIC ACTIVITIES OF THE VATICAN

The Holy See maintained diplomatic relations with 35 other nations. Two important international agreements between the Vatican and other states were concluded. Foremost was the agreement signed at Madrid regarding the appointment of Bishops. The freedom of the Vatican in the choice of new members of the Span-

ish Hierarchy was assured. A convention between the Holy See and Haiti regarding the administration of church properties was ratified. An important international action was the cooperation of the Holy Father in bringing about an armistice between Peru and Ecuador in their dispute. Like the Pontiff, the various Congregations and agencies of the Holy See functioned at an almost unprecedented pace.

THE CHURCH IN ENGLAND

German bombs destroyed many religious institutions in Britain. Amid the ruins sprang up a movement named the Sword of the Spirit, initiated by His Eminence Arthur Cardinal Hinsely, to unite all Christians in defense of Christianity against aggressive paganism and to lay the foundations for a peace based on the five points of the Holy Father's program.

THE CHURCH IN GERMANY

Archbishop Conrad Groeber, of Freiburg-im-Breisgau, in a pastoral letter, declared the war had increased the ills of the Church in Germany. The Archbishop's letter was one of several open statements by German prelates charging Nazi determination to obliterate the Church in the Reich. The Hierarchy of Germany, in a published statement, protested the oppressive measures against the Church and called upon the faithful to remain staunch in their Faith. Courageous denunciation by Bishop Clemens August Count von Galen, of Muenster, of methods used by the Gestapo caused a sensation throughout Germany and the occupied territories. In July, Bishop Franz Borne-wasser of Trier protested against Gestapo expulsion of Religious.

HOLLAND, BELGIUM, FRANCE

The Bishops of Holland were extraordinarily vocal in their opposition to the Nazis. His Eminence Joseph Cardinal Van Roey, Primate of Belgium, called upon his people

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to bear up under their trials with the same fortitude Belgians showed in the German occupation during the first World War. A joint letter of the Hierarchy in unoccupied France, issued in March, contained a pledge of loyalty to the established power of the Government of France. Catholic life in occupied France was afflicted by many restrictions, but whole villages, it was reported, formerly separated from the Church, have returned to the practice of religion.

RUSSIA AND THE BALTIC

Russia became a new theater of war. The fate of the Church in Russia under the Soviets was indicated in the *Annuario*, which showed that, of 13 Apostolic Administrators in the country since 1926, 11 were in prison or exile, while information was wanting about the other two. Refugee priests from Lithuania told of the hardships endured at the hands of the Russians, treatment, they said, equalled by the Nazi persecution of the Poles, but carried on more covertly. The American Lithuanian Roman Catholic Federation in the United States made disclosures that the Nazi invaders were continuing and extending the Russian outrages in plundering, devastating, and denationalizing the country.

CANADA AND LATIN AMERICA

An appeal of His Eminence Rodrigue Cardinal Villeneuve, Archbishop of Quebec, for unity and the celebration of a "Victory Mass" gave further impetus to Catholic war work in Canada. Many things happened in Mexico that were heartening to Catholics throughout the world. Outstanding event in the ABC countries of South America was the National Eucharistic Congress in Santiago, Chile, which was attended by 500,000 Catholics from all parts of South America and from the United States.

The Argentine Hierarchy issued a joint pastoral urging a Crusade of Good Will in the interest of the working classes. Catholic Action, inspired by the anniversaries of the Social Encyclicals, petitioned the Chamber of Deputies for a new law that would assure family allocations to all wage-earners. The new Catholic University of Brazil in Rio de Janeiro opened with an enrollment of over 100 students. Bogota was the scene of the Fourth Congress of the Ibero-American Federation of Catholic Students in August. The vexing problem of religious instruction in Venezuela schools showed definite improvement. Uruguayan Catholics devoted themselves energetically to promotion of Catholic social principles.

THE EASTERN CHURCHES

By E. R. HARDY, JR.

GENERAL THEOLOGICAL SEMINARY, NEW YORK

HELLENIC (GREEK) ORTHODOX CHURCH

The Greek communities of America gave much attention during 1941 to the work of the Greek War Relief Association, of which Archbishop Athenagoras is National Chairman; committees for it are organized in each of the parishes, and the Archbishop has addressed many meetings on its behalf. The usual collection was taken up at Christmas, 1940 for the Oecumenical Patriarch of Con-

stantinople, to whose jurisdiction the Archdiocese of North and South America belongs; and in the fall of 1941 there were collections for the rebuilding of the Patriarchate at Constantinople, seriously damaged in a fire of undetermined origin in September.

The Greek Church in America has continued to advance its own work and improve its organization. The Theological School at Pomfret, Conn., which completed its fourth year on

THE EASTERN CHURCHES

June 8, had 80 students in 1940-1941; in the daily and catechetical schools of the Archdiocese there were 585 teachers and over 25,000 pupils. Both of these figures have more than doubled in the last ten years. The Educational Committee of the Archdiocese at its meeting on Feb. 6, 1941, made plans for improved textbooks, and for making use of day school released time where allowed. The Women's Benevolent (Philoptochos) Society has been admitted into the Federation of Women's Clubs, constituting the second largest group in that organization.

Two bishops were consecrated in November by Archbishop Athenagoras, assisted by Greek and other Orthodox bishops. On Nov. 23 the Rev. Eirinaios Tsourounakis was made Bishop of San Francisco; he is a native of Cyprus, and was formerly vicar of the Cathedral (under the late Archimandrite Kourkoulis), and more recently priest of the Church of the Annunciation, New York. On Nov. 30 the Rev. Germanos Polizoides was made titular Bishop of Nyssa, to serve as auxiliary to the Archbishop; a graduate of the patriarchal seminary at Halki, he had served at St. Demetrius', Astoria, N. Y. and as editor of the *Orthodox Observer*, and is the author of several catechisms and other religious books.

RUSSIAN ORTHODOX CHURCH

In 1941 the Russian Orthodox Church of America published a year-book which gives a picture of its current organization and activities. Under Metropolitan Theophilus of San Francisco there are nine bishops and 216 parishes, organized in 18 deaneries. In addition there are three deaneries in Alaska (18 parishes, several of them without priests, however) and four deaneries (50 parishes) in Canada. The greatest strength of the Russian Church is in Pennsylvania; at South Canaan, Pa., there is a monastery and a group of institutions (Pastors' School, Orphanage, and Clergy Home). There is also a small monastery at Jordanville, N. Y. The Cathedral and Theological Seminary

are in New York City. The youth organization, Federated Russian Orthodox Clubs, is organized in ten districts. There are eight Russian Orthodox Mutual Aid societies, having a membership of over 43,000, and combined capital of over \$4,000,000.

The Episcopal Sobor met during the year for the current business of the Church; in conjunction with a committee of priests and laymen, it is planning for the next General Sobor, to be held in the fall of 1942. After the invasion of Russia the Metropolitan issued a pastoral calling for prayers for the afflicted Russian people and their land, and calling on the clergy to celebrate moliebens (votive offices) for that intention. The Rev. John Telep of Garfield, N. J. has been appointed to arrange for religious ministrations for Orthodox men in the United States Army.

Mention may be made of the honors paid to the Rt. Rev. William T. Manning, long a staunch friend of the Orthodox Churches, on the occasion of the twentieth anniversary of his consecration as Episcopal Bishop of New York. On May 18 he was received with special honors at the Greek Cathedral, and on Oct. 26 a service and reception were held for him at the Russian Cathedral, at which he was presented with a panagia (pectoral icon) formerly worn by the late Metropolitan Platon.

OTHER ORTHODOX CHURCHES

Several of the Orthodox Churches, which have been in close contact with corresponding Churches in Europe, have had to organize themselves on a more independent basis. Bishop Polycarp of the Rumanian Church is in Rumania, and unable to return to this country. The church administration is temporarily in the hands of an executive committee. An interesting event was the consecration of the Rumanian Church in New York on Nov. 16 by Archbishop Athenagoras. Bishop Dionisy of the Serbian Church has announced that his Church intends to undertake the training of priests at the Serbian Monastery at Libertyville, Ill. Bishop Andrei of

the Bulgarian Church has been visiting and strengthening the Bulgarian parishes in this country. In the Syrian Antiochian Church, Bishop David of Toledo (formerly associated with a dissident group) has been recognized as auxiliary to the Metropolitan Antony.

ORTHODOX CHURCHES ABROAD

Yugoslavia, Bulgaria, Greece.—The calamitous effects of the war in Orthodox countries are well known, but have at the same time prevented the reception of accurate news in this country. In Yugoslavia the Patriarch Gavril has been in confinement (according to reports), in a monastery near Belgrade, several bishops have been expelled from their sees, including the well-known theologian Bishop Nicolai, Bulgarian bishops have been introduced in some areas under Bulgarian occupation, and the ecclesiastical administration is disorganized. In Greece the Archbishop of Athens has been removed from his functions owing to his refusal to coöperate with the occupying power.

Russia.—The invasion of Russia found all divisions of the Russian Church united in support of the country. For whatever reason, there has been some slackening in the Soviet Government's anti-religious campaign (although no change in its official policy); the organ of the Society of the Godless has suspended publication, officially on account of the shortage of paper. Russian prisoners and Russians in the occupied area have, as was expected, shown that religion is not extinct among Russians by taking part in religious services and welcoming religious ministrations. There has been some attempt on the part of the German authorities to take advantage of this sentiment by suggesting that Orthodoxy may gain from their "crusade against Bolshevism." The greater part of the Russian Church outside Russia has, however, resisted this; some Orthodox circles are concerned at the prospect of Roman Catholic propaganda, especially under the auspices of the Hungarian army.

Japan.—The recent Japanese laws on religious organizations necessitated the resignation of the Bishop of Tokio (one of the few Russians still associated with the Orthodox Church in Japan) in 1940. The Rev. John Ono, a highly esteemed parish priest, was elected his successor and consecrated on April 6, at Harbin, under the name of Bishop Nicholas of Tokio as the first Japanese Orthodox Bishop.

SPIRITUAL UNITY AND OTHER MATTERS

The Orthodox Churches continue to provide, even under the abnormal conditions of the present time, spiritual strength to their respective nations. Exterior pressure has divided the Orthodox nations, but has not wholly broken the spiritual unity of the Church. In this country the American-born generation is in different degrees coming to the fore in all the Orthodox Churches, which are loyally American, although concerned to maintain the cultural as well as religious traditions which they brought with them. The state of the language question varies according to the conditions of the various Churches. English is used extensively in the Syrian and to some extent in the Russian Church; the Hellenic Orthodox Church, on the other hand, makes considerable efforts to preserve the knowledge of Greek, as being the language not only of the Hellenic nation, but of the ancient Church.

OTHER EASTERN CHURCHES

The election of the Catholicos of All Armenians, which was to have been held in April, 1941, at Etchmiadzin has been postponed indefinitely, owing to the impossibility of foreign delegates coming to Soviet Armenia. In America the Rt. Rev. Mampre Calfayan, formerly acting prelate in New York, has become head of the prelacy of California. (The Armenian Church in the United States is organized in two prelacies.)

Mar Shimun, Catholicos of the Assyrian (Nestorian) Church has taken up his residence in New York, and is visiting and extending the Assyrian parishes in this country.

JUDAISM AND JEWISH COMMUNAL AFFAIRS

BY HARRY SCHNEIDERMAN

EDITOR, *American Jewish Year Book*

GENERAL

The course of the war, the progressive commitment of America during the year to a policy of all-out aid to the anti-Hitler forces, and the entry in December of the United States into the war as a belligerent ally of those forces, determined, in large measure, the development of Jewish communal affairs in 1941. To an even greater degree than in 1940, emphasis in Jewish affairs came to be placed on meeting the colossal responsibilities imposed by the war, the national emergency, and the threat to American religious and national institutions. Overseas relief activities, coordinated efforts at reconstruction and refugee care, and the extension of moral and material aid to the Jewish community in Palestine had to be adapted to the course of the war abroad which engulfed the populous Jewish communities of the Balkans and eastern Europe. At home, the resources of Jewish religious, social, and fraternal institutions were increasingly directed towards integration into the national defense program, particularly civilian defense and the religious and recreational needs of Jewish men in the armed forces. At the same time, a notable trend toward revitalizing Jewish religious, educational, and cultural expression as a means of strengthening morale and affording spiritual meaning to the contemporary struggle was evident.

NAZI PERSECUTION

That the task of relief and rehabilitation assumed by American Jews on behalf of their co-religionists abroad would prove no light burden became evident as the record of the Hitler war and Nazi brutality unfolded on the continent of Europe. Commencing with the bloody pogrom in Rumania in January, when the Nazis marched in to "preserve order," and

continuing with the conquest of the Balkans in the spring and the invasion of Russian territory at the end of June, the Nazi "new order" for the exploitation of subject peoples followed in the wake of Hitler's armies. Segregation, discrimination, execution of "hostages," forced labor, the liquidation of educational institutions were visited upon all those who came under the Nazi heel, but in accordance with the Nazi "hierarchy of races" the worst fate was reserved for the Jews in each conquered country. More than half of Europe's 9,000,000 Jews were thus subjected to the various refinements of Nazi cruelty during 1941. The severest anti-Jewish drive since 1938 was inaugurated in the Reich in September, spread to the occupied and puppet states, and reached its tragic climax with the wholesale massacres reported from the Ukraine and Galicia the next month.

Anti-Jewish measures appeared to be aimed at the extermination of as many European Jewish communities as possible and the segregation of the remainder in the ghettos of eastern Poland. Deportations from all parts of the Greater Reich, presumably for forced labor in the Pinsk marshes, were followed by similar action by the puppet governments of Hungary and Rumania. The latter boasted that Bessarabia had become *judenrein*. The wearing of the yellow badge was introduced for Jews from six to 60 in Germany and German-occupied areas, while economic and social discrimination was carried to tragic extremes. Economic "aryanization" was intensified in both the occupied areas and puppet states such as Slovakia, Hungary, and Rumania. Particularly saddening was the introduction of a comprehensive anti-Jewish law in Vichy France on June 2, excluding Jews not only from political rights but from many economic

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spheres on a "racial" basis. The immediate result of these measures was a mortality rate of unprecedented proportions due to war, oppression, mass executions, and epidemics caused by forced overcrowding, undernourishment, and lack of sanitation. From this fate, few Jews found it possible to escape as it was estimated that not many more than 100,000 emigrated from Europe in the two years of 1940 and 1941.

RELIEF MEASURES

Despite the immensity of the burden and difficulties imposed by the war and the closing of American consulates in Axis territories, relief agencies continued their work of assisting thousands with emigration aid, retraining, medical supplies, and living necessities. During 1941 the Joint Distribution Committee, chief American agency for aid to distressed Jews overseas, appropriated \$5,700,000 for its relief work principally in Europe. Although it operated in Germany and German-occupied territory, relief activities were so conducted as not to aid Nazi economy by remittance of American dollars or the breaking of the British blockade. Emigration assistance enabled over 16,000 refugees to leave Europe during 1941, while relief was extended to some 500,000 Jews in Poland and 195,000 in Germany and Czecho-Slovakia. In France, the J. D. C. assisted some 50,000 refugees; at the same time, its program of relief, vocational retraining, and emigration assistance continued in Spain, Portugal, Switzerland, Turkey, and North Africa. Outside the European continent, the J. D. C. conducted an extensive refugee relief program in the Far East where its funds supported 14,000 of the 20,000 refugees in Shanghai, and substantial sums were spent in Latin American countries to facilitate the absorption of newly arrived refugees. With the entry of the United States into the war, plans previously prepared, including appropriation of \$1,500,000 for the needs of local Jewish relief committees in occupied countries, were put into effect. The

J. D. C. emphasized at its 27th annual meeting in December that now, as in the past, work would be carried on subject to the policies of our government, and that funds would in no way be allowed to benefit the enemy directly or indirectly.

Other relief agencies also announced continuance of overseas work during wartime. An example of the work of HIAS (Hebrew Immigrant Aid Society) was the remittance of \$20,000 to Lisbon on April 20 for transportation of refugees released from French internment camps. According to a report issued on Nov. 24, more than 2,350 refugees were enabled by the HIAS-ICA Emigration Association to leave Europe in the year ended June 1941. Its program of retraining European refugees and war victims in handicrafts and agriculture was expanded by the American ORT in France and several Latin American countries during 1941 in accordance with plans made in February.

PALESTINE

Palestine continued to figure in the news as a democratic bastion in the Middle East and as a major haven for refugees. American Zionists intensified efforts for Palestine development through funds coordinated through the United Palestine Appeal. It was reported that, from Oct. 1, 1940 to Sept. 1, 1941, the Jewish National Fund and Palestine Foundation Fund spent more than \$7,500,000 in the Holy Land for colonization, land purchase, relief, immigrant training, economic and educational programs. During this period, monthly immigration was estimated at about 1,000, including refugees without certificates as well as registered immigrants. The total Jewish population of Palestine is now put at 550,000.

During the autumn, the Jewish Agency for Palestine, supported by virtually all political groups in the Jewish settlement, opened a drive to recruit 10,000 additional Palestine Jews for the army of the Middle East. By October, more than 10,000 Jews were already serving in various branches of the British forces in that

JUDAISM AND JEWISH COMMUNAL AFFAIRS

area and had taken part in the Greek and Libyan campaigns. Nevertheless, the plan for creation of an autonomous Jewish military corps, urged by all Zionist circles and supported by a large segment of public opinion in Britain and the United States, was officially rejected by the British Government in October. The reason advanced was the difficulty of equipping and training such a force with the limited resources available. Zionist circles, evincing skepticism of the reason given, voiced resentment and disappointment and launched a campaign designed to increase public support for the plan.

The movement for the formation of a Jewish army gained ground in American Zionist circles during the year, every Zionist conference having adopted resolutions in its favor. Support also came from the American Palestine Committee, formed in March under the chairmanship of Senator Robert F. Wagner of New York and endorsed by more than 300 non-Jewish legislators, public officials, and churchmen. From other Zionist quarters came the inspiration for creation on Dec. 4 of the Committee for a Jewish Army under the chairmanship of Pierre Van Paassen. Opposition to the plan, however, was voiced by some Jewish circles in the United States which regarded the creation of a separate Jewish military corps as unwise and prejudicial to the position of the great majority of Jews who are nationals of countries other than Palestine.

ZIONIST AFFAIRS

Notable among Zionist trends during the year was the role played by the Emergency Committee for Zionist Affairs, which coordinates the political work of the major Zionist bodies, the tightening of control over affiliated Zionist efforts by the Zionist Organization of America, and formation in November of the American Zionist Youth Commission. The 44th annual convention of the Zionist Organization of America, held in Cincinnati, Sept. 6-8, recognizing "the compelling urgency of coordinating

all Zionist activities," adopted a resolution which provided (1) that no member of the Z. O. A. shall serve on the governing bodies of the Keren Hayesod (Palestine Foundation Fund), Jewish National Fund, United Palestine Appeal, or as a member of the Emergency Committee without the approval or designation of the executive committee of the Z. O. A., and (2) that every member of the Z. O. A. serving on these bodies shall on all matters of policy accept the instructions of and be responsible to the executive committee of the Z. O. A.

Reconstruction of Palestine as a Jewish commonwealth and extension of Lend-Lease aid to Palestine were highlighted in other resolutions adopted. Judge Louis E. Levinthal of Philadelphia was elected president. Women Zionists at the 27th annual convention of Hadassah in Pittsburgh, Oct. 29-Nov. 2, reiterated their support for the Zionist program. It was reported at the convention that Hadassah had spent \$1,862,000 for medical aid, child and maternal welfare, and other charitable purposes in Palestine. An example of Hadassah work was the presentation of \$35,000 during September for construction of a new tuberculosis wing in the Rothschild-Hadassah-University hospital in Jerusalem. Other Zionist news of interest during the year was the celebration of the 40th anniversary of the Jewish National Fund and the 30th of Mizrahi, religious Zionist body.

NATIONAL DEFENSE EFFORTS

In addition to participating as individuals in the American defense effort, which was organized in the main on a non-sectarian basis, American Jews devoted an increasing proportion of the resources of religious and social agencies to aiding the national defense program. Jewish social agencies cooperated with Federal, state and local defense bodies in meeting the problems arising out of the emergency, particularly those of health, education, and civilian defense. The Jewish Welfare Board,

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officially recognized as the organization in charge of recreational, religious, and educational needs of Jewish men in the armed forces, expanded its activities in army camps, naval stations, and industrial defense centers. Cooperating with the military commands and the United Service Organizations, of which it is a constituent member, the J. W. B. operated 325 community centers in strategic areas and established 225 local Army and Navy Committees to provide social activities for men in the service. Local Jewish community centers and Y. M. H. A.'s, affiliated with the Board, adapted their recreational and social resources to the needs of this program. With the outbreak of war, the J. W. B. placed its facilities at the disposal of the government and announced active participation in the Red Cross war relief drive. Following the attack on Pearl Harbor, emergency funds were made available to J. W. B. representatives in Hawaii and the Philippines. Earlier, the J. W. B. announced the opening of a recreation center in Newfoundland and the dispatch of supplies and prayer kits to Jewish soldiers in Iceland.

Notable among social welfare agencies active in the defense program is the B'nai B'rith, largest Jewish fraternal organization, which has coordinated the defense activities of its 600 lodges through a national defense committee appointed in May, 1940. Aside from placing the resources of its lodges at the disposal of government and public agencies engaged in defense work, B'nai B'rith actively cooperated with the Red Cross, Jewish Welfare Board, Office of Civilian Defense and the U. S. O., and encouraged its members to engage in defense activities. B'nai B'rith also engaged in a special drive to secure *Sifrei Torah* (Scrolls of the Law) for use in Jewish religious services in army camps. Other fraternal bodies adopted programs of participation in civilian defense and sale of defense bonds. The Jewish War Veterans announced on Dec. 21 a sweeping "victory program" calling for enlistment

of 250,000 veterans in war service, purchase of six pursuit planes, and a drive to sell \$25,000,000 in defense bonds. Among women's groups, the National Council of Jewish Women established volunteer bureaus for Red Cross training and civilian defense, while Hadassah began registration of its entire membership for civilian defense work on Dec. 22.

MORAL AND RELIGIOUS DEVELOPMENTS

The revival of interest in the basic relation between religion and democracy, as well as emphasis on the moral and religious aspects of the world conflict, continued to provide the central theme of Jewish religious deliberations and activities during 1941 as it had the previous year. Stress was laid on the democratic elements inherent in Judaism, and, at the same time, a definite trend toward a return to traditional practices by Reform Judaism was evident. The Euclid Avenue Temple of Cleveland, O., to give one instance, announced in October that the weekly Sabbath service would be transferred from Sunday to Friday evening, the traditional Sabbath eve.

Concomitantly there appeared a growing trend toward closer cooperation between Orthodox, Conservative, and Reform elements in American Judaism. This was reflected in the meeting of Orthodox, Conservative, and Reform rabbis at the Jewish Theological Seminary in May with the purpose of establishing better understanding within Judaism through the fellowship of its rabbinic leaders. It appeared, also, in the increased recognition gained by the Synagogue Council, representative of Judaism's three branches in America, which was invited to join the General Jewish Council. Notable also was the plan proposed by the Inter-Congregational Committee of Louisville, Ky. to enforce a sense of communal responsibility on Jews of that city by denying congregational and rabbinical services to Jews who, though financially able, fail to become members in one of the Jewish congregations.

JUDAISM AND JEWISH COMMUNAL AFFAIRS

Because of the objection of one congregation, the "Louisville plan," as it later came to be known, was not adopted. It led, however, to closer union in that city by inducing transformation of the inter-congregational committee into a Louisville Conference of Synagogues and Temples. Moreover, the plan itself was adopted on a smaller scale by the two congregations of Evanston, Ill., and was regarded sympathetically in other cities.

COUNCILS AND MEETINGS

Revival of the Jewish spiritual heritage was urged at the 37th biennial council of the Union of American Hebrew Congregations in Detroit, April 26-30. The Council approved recommendations for increased development of interfaith institutes, greater support for youth activities, and participation in movements for strengthening democracy. Reform rabbis at the 52nd annual meeting of the Central Conference of American Rabbis, held in Atlantic City in June, approved reports of its commissions on Social Justice and Peace calling for a post-war federal union, urged establishment of a "more comprehensive and durable" General Jewish Council, and voted to intensify pro-democratic and good-will efforts. Particularly noteworthy was continuance of the pro-Zionist trend in American Reform Judaism manifested in these deliberations and in the fact that the C. C. A. R. elected as its president, Rabbi James G. Heller, chairman of the national administrative council of the Zionist Organization of America.

SERVICE AND EDUCATIONAL ADJUSTMENTS

Emphasis on adjusting religious service and Jewish education to meet the needs of the crisis was also marked in the Conservative wing. In April, the United Synagogue of America ratified the report of its National Committee to Strengthen Religious Life, headed by Dr. Elias Solomon, which presented a program

of synagogue expansion and youth training, as well as cooperation with social welfare bodies. "Judaism in a War-Torn World" was the theme of the annual convention of the Rabbinical Assembly of America (Conservative), held in Philadelphia in May. The convention adopted recommendations to conduct a study of the relationship between rabbis and congregations, to establish a Standard Prayer Book Commission, to appoint committees on Sabbath Observance and on Jewish Family Living, and to strengthen support of the Zionist ideal.

The Union of Orthodox Jewish Congregations of America completed its survey and analysis of methods of Jewish education appropriate for the hundreds of Talmud Torahs administered by orthodox congregations. Its Commission on Jewish Education, under the chairmanship of Rabbi Leo Jung, also completed the plan for a uniform curriculum for Orthodox Jewish schools.

This growing concern of all Jewish religious bodies with education of the young was reflected during 1941 in the continuance of efforts for standardization of methods, coordination of administration and financing, and the assumption of community responsibility for Jewish religious schools, particularly in the larger cities. Nor was this confined to the young. Almost all of the congregational federations gave greater prominence to adult education than in the past, while such features as the Adult Jewish Education program of the Jewish Theological Seminary and observance of Jewish Book Week in November continued. During 1941, the American Association for Jewish Education, at its annual meeting in Washington and at a score of regional conferences, paid particular attention to the relations between the Jewish school and the community in which it operates. The Association again sponsored Jewish Education Month and Week devoted to increasing pupil enrollment and making the adult Jew conscious of religious educational needs.

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SOCIAL WELFARE

Jewish Federations and Welfare Funds in 97 cities, representing about 75% of the Jewish population, appropriated a total of \$22,474,808 for the support of local, national, and overseas Jewish welfare efforts during the year, according to an estimate made by the Council of Jewish Federations and Welfare Funds early in December. A breakdown of the total showed that more than one-half, about 56.6 per cent, was set aside for the support of various local charities, while a little over 30 per cent went for relief and reconstruction work overseas and refugee adjustment in the United States, most of which was allocated through the United Jewish Appeal.

As of the middle of 1941, the Council of Jewish Federations reported the existence of organized central communal agencies in 266 urban centers, varying widely in scope, function, and degree of coordination of welfare efforts. The year, however, witnessed a widening of the base of coordination, particularly with the transformation of many Federations into Jewish Community Councils. Coordination of fund-raising efforts, particularly in the overseas field and national service agencies, aggravated the problem of allocation by local funds to non-local agencies.

To meet this need, a proposal was submitted to the General Assembly of the Council of Jewish Federations and Welfare Funds in Atlanta, Feb. 1-3, that an advisory budget service be established under the direction of the Council to assist local funds in evaluating the work of the national and overseas agencies and make recommendations about their relative needs. The proposal was opposed by a substantial segment of the community on the ground that the task of evaluating needs would be prejudiced by the ideological predilections of the advisory group. It was finally submitted to a referendum of the member agencies of the Council and, according to the official report, was approved by a majority. In view of the extent of opposition, however, the

Council decided on May 20th that "reports in 1941 will not attempt to translate evaluations in terms of total budget requirements and no specific recommendations will be offered to member agencies."

Problems of community organization and the relation of social welfare to the defense program were also discussed at the National Conference of Jewish Social Welfare in Atlantic City, June 6-10, which paid tribute to the courage of Jewish social workers in Europe engaged in administering the overseas relief program. Meeting with the social workers were delegates of the National Association of Jewish Center Workers and the National Council for Jewish Education.

NATIONAL REFUGEE SERVICE

Overseas relief operations have been reviewed above, but it is interesting to note here that about 90% of all appropriations made by Welfare Funds for non-local purposes went to agencies engaged in relief and reconstruction work abroad and refugee service in the United States. Despite increasing transportation problems and more stringent visa regulations, the National Refugee Service estimated that about 2,000 refugees were arriving monthly until the outbreak of the war. In addition to providing relief and employment service, the N. R. S. and cooperating agencies expanded its vocational training and resettlement program. In the first 11 months of 1941, the N. R. S. extended financial assistance to 13,500 individual refugees, accomplished more than 6,000 employment placements, as well as 1,586 placements of physicians, musicians, rabbis and other professionals, resettled 3,075 away from New York, extended many small loans, and provided 92,391 migration services for refugees. Conferences between officers of the organization and Washington authorities during December were concerned with defining the status of refugees, many of whom are technically enemy aliens. Indiscriminate dismissal of refugees, the N. R. S. pointed out, was contrary to government policy. Continuance of

the major aspects of the refugee adjustment program was indicated for 1942.

GENERAL JEWISH COUNCIL

In growing cooperation with local communities, civic-protective agencies, concerned with maintaining intact the civil and religious rights of Jews, directed their efforts toward interpreting to the non-Jewish community problems affecting the Jewish group, combating overt anti-Jewish manifestations and overcoming social and economic discrimination through group education. The identity of the needs and interests of the Jews of America with those of its other citizens was stressed at the 34th annual meeting of the American Jewish Committee, which declared that it looked upon its work "in the broader light of the maintenance of democratic and religious values in the present crisis." The American Jewish Congress assumed the leadership in calling an Inter-American Jewish Congress, to discuss problems common to Jewish communities in the Western Hemisphere, which met in Baltimore in November. This organization, under the leadership of Dr. Stephen S. Wise, also played a prominent part in the formation of the Jewish Section of the Interfaith Committee for Aid to the Democracies, which collected almost \$500,000 used principally for establishing non-sectarian nursing homes in England for child evacuees.

"Coordination of the activities of the American Jewish Congress, the American Jewish Committee, the B'nai B'rith, and the Jewish Labor Committee which relate specifically to the safeguarding of the equal rights of Jews through the creation of a single body," was accomplished in 1938 with the establishment of the General Jewish Council. Dissatisfaction with the work of the Council, because it failed to "coordinate," was voiced at several conferences of national Jewish organizations during the year. Moreover, on April 6, 1941, following the announcement of the American Jewish Committee and the

Anti-Defamation League of B'nai B'rith of a joint fund-raising campaign, the American Jewish Congress withdrew from the Council charging that it had "ceased to exist, except in name, by reason of its failure to act." The work of the General Jewish Council continued, however, and was activated with the appointment of Isaiah Minkoff as executive director. Creation of a special committee to coordinate the educational and civilian defense activities of the constituent agencies, as well as the decision to broaden out by inviting the Synagogue Council to join, further served to give the Council added importance.

SORDID ASPECTS OF ANTI-SEMITISM

Characteristic of anti-Semitism during 1941 was its employment by some isolationist elements who attempted to discredit the national policy of aid to the democracies and America's growing hostility to Hitlerism by interpreting it as due to "Jewish influence." The adoption of this technique played not only into the hands of the Nazis but also helped anti-Semitism to graduate from the crackpot variety of McWilliams and Pelley to the plane of respectability.

In fact, the familiar, vulgar type of Jew-baiting began to play a minor role in anti-Jewish manifestations during 1941. Although *Social Justice* continued to print its diatribes, its sphere of influence perceptibly diminished when Father Charles E. Coughlin discontinued his broadcasts in the fall of 1940 due to the objections of his ecclesiastical superiors. William D. Pelley, leader of the Silver Shirts, was returned to North Carolina by the United States Circuit Court of Appeals on April 14 to answer charges that his fascist activities had violated conditions of a suspended sentence under the State Securities Sales Law. Pelley's activities continued with publication of his anti-Administration, anti-Semitic sheet *Roll-Call*, but its publication

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was suspended with the entry of America into the war.

Other fascist sheets, such as the weekly *American Bulletin* of John Gaede, mouthpiece of McWilliams' American Destiny Party; Sam D. Melson's *Jacksonville* (Fla.) *Herald Tribune*; Robert E. Edmondson's bulletins; and the *Industrial Control Reports* of James True, all suspended publication. The "Christian Front" was quiescent, while Joseph McWilliams, "fuehrer" of the American Destiny Party, was ordered by the New York Felony Court, on Oct. 28, to serve the remaining term of a suspended sentence for violating his probation by resuming anti-Jewish street speeches. In New Jersey, Wilhelm Kunze and other German-American Bund leaders were arrested and convicted on charges of fomenting racial and religious hatreds. New Jersey's "race hatred" law under which they were convicted was, however, declared unconstitutional on Dec. 5. Conceding that the advocacy of racial and religious hatreds was "revolting," the New Jersey Supreme Court maintained that so long as no clear and present danger to the safety of the state and the community resulted from the dissemination of hate propaganda, such expression was protected by the constitutional rights of free speech. With the outbreak of war, most of these elements went underground.

ANTI-SEMITISM IN CONGRESS

The emphasis in anti-Jewish manifestations during 1941 thus shifted to the veiled implications and threats voiced by some isolationist leaders in the halls of Congress and on America First Committee platforms, where discussions of national issues in terms of "Jewish interests and influences" became frequent. Thus, on May 27, Representative Lambertson of Missouri made wild charges that Charles A. Lindbergh had been refused radio time through Jewish pressure, a charge that was soon refuted by Representative Leon Sacks of Philadelphia. On June 4, Congress-

man Rankin of Missouri charged that "Wall Street bankers and international Jews" were dragging the country into war. Shortly after addressing the House in reply to this diatribe, Representative M. Michael Edelstein of New York was fatally stricken. In the Senate, anti-Semitic insinuations also colored the speeches of men like Rufus C. Holman of Oregon and Gerald Nye of Nebraska.

AMERICA FIRST COMMITTEE

Although the America First Committee included among its followers many loyal persons actuated by a sincere devotion to the cause of isolationism, it soon came to harbor many of the anti-Semitic elements. Some of its more conspicuous leaders, knowingly or not, began to use Nazi phraseology and the Nazi device of turning the debate on foreign policy into a "Jewish issue." Charles A. Lindbergh, in a speech on April 23, spoke ominously of "a minority" behind interventionist sentiment, while Senator Burton K. Wheeler, most active and vocal of the isolationists, trotted out the old charges about "international bankers." Towards the end of the summer, such manifestations increased. Charges were made that Senators Gerald P. Nye of Nebraska and Bennett C. Clark of Missouri were conducting a Senate subcommittee "investigation" of the motion picture industry with anti-Semitic intent. These insinuations came to a head with Charles A. Lindbergh's speech on Sept. 11 at Des Moines, when he accused the British, the Roosevelt Administration, and the Jews as a group driving the nation to war, and declared that the danger lay in Jewish "ownership and influence" in the press, radio, and government.

REACTIONS TO ANTI-SEMITISM

Condemnation of unprecedented severity was the virtually unanimous reaction of the press and American public opinion to the Lindbergh speech. Prominent political leaders, educators, trade unionists, clergymen, and an almost unanimous press

joined in denouncing this appeal to prejudice as irresponsible, false, un-American and patterned on the Nazi technique. Civic leaders, church groups, and trade unions used the occasion for expressing their condemnation of intolerance in general and anti-Semitism in particular. The Federal Council of Churches of Christ, as well as 700 prominent Protestant churchmen, denounced Lindbergh's tactics and urged Christians to "continue preaching against this moral disease of anti-Semitism." The American Unitarian Association, in general conference at Pittsburgh, Oct. 27, unanimously approved a resolution against anti-Semitism, while pledges to fight racial and religious prejudices came from individual clergymen throughout the country. Attorney General Francis Biddle told the National Association of Attorneys General that popular resentment at recent attacks on Jews indicated that "such Nazi methods do not find response in America."

Such outstanding Americans as President Nicholas Murray Butler of Columbia University and Wendell L. Willkie assumed the initiative in warning their countrymen against anti-Jewish propaganda as a menace to American democracy. Catholic opinion was voiced by the pronouncement of Catholic Bishops, issued on Nov. 17, which included a strong statement condemning the inhuman treatment to which Jews have been subjected and, upon various occasions throughout the year, by Bishop Joseph P. Hurley of Florida and Msgr. Fulton J. Sheen who declared that anti-Semitism is anti-Christian. Resolutions at both A.F.L. and C.I.O. conventions also decried efforts at dividing the American people through appeals to prejudice. Symbolic of this national unity was the dedication on Dec. 15 of the George Washington-Robert Morris-Haym Salomon monument, erected by the Patriotic Foundation of Chicago.

Although the attack on Pearl Harbor and the Axis declaration of war on the United States stimulated the spirit of national unity in the face of the crisis and pledges of patriotic support came from all sections of the isolationist wing, the possibility that the sacrifices and tensions of war might serve to revive intolerance and scapegoat hunting was not overlooked. Recalling that the first organized anti-Semitic movement in America followed the first World War, Dr. Everett R. Clinchy, in his presidential report to the National Conference of Christians and Jews, as early as May 9, warned American leaders to "build a dike against a possible new wave of fear, prejudice and intolerance." The outbreak of war served to give immediate significance to this warning.

JUSTICE BRANDEIS

American Jews joined their fellow countrymen in mourning the passing, on Oct. 5, of Louis D. Brandeis, retired Justice of the Supreme Court of the United States and the first Jew to hold that position. Memorial services were held in many synagogues and messages of tribute were received from Zionist circles and Jewish leaders throughout the world. Tribute to a native son was also paid by Louisville, Ky. at a memorial meeting for Justice Brandeis on Nov. 11.

MR. STROOCK AND DR. ISRAEL

The American Jewish community also mourned the sudden passing, on Sept. 11, of Sol M. Stroock, President of the American Jewish Committee and prominent civic and religious leader, and of Dr. Edward L. Israel, recently appointed executive director of the Union of American Hebrew Congregations and president of the Synagogue Council of America, who died in Cincinnati on Oct. 19.

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PERIODICAL PUBLICATIONS

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| <p><i>Advance</i> (Congregational)
14 Beacon Street, Boston.</p> <p><i>America</i> (Jesuit)
53 Park Place, New York City.</p> <p><i>American Hebrew</i>
48 West 48th Street, New York City.</p> <p><i>Catholic Action</i>
1312 Massachusetts Ave. N.W., Washington, D.C.</p> <p><i>Catholic Review</i>
21 West Franklin Street, Baltimore, Md.</p> <p><i>Catholic World</i>
401 West 59th Street, New York City.</p> <p><i>Christendom</i>
297 Fourth Ave., New York City.</p> <p><i>Christian Advocate</i>
150 Fifth Ave., New York City.</p> <p><i>Christian Century</i>
95 Madison Ave., New York City.</p> <p><i>Christian Herald</i>
419 Fourth Ave., New York City.</p> <p><i>Christian Leader</i> (Universalist)
16 Beacon Street, Boston.</p> | <p><i>Christian Register</i> (Unitarian)
25 Beacon Street, Boston.</p> <p><i>Churchman</i> (P.E.)
425 Fourth Ave., New York City.</p> <p><i>Church Management</i>
Auditorium Bldg., Cleveland, O.</p> <p><i>Commonweal</i> (R.C.)
386 Fourth Ave., New York City.</p> <p><i>Contemporary Jewish Record</i>
386 Fourth Ave., New York City.</p> <p><i>International Journal of Religious Education</i>
203 N. Wabash Ave., Chicago.</p> <p><i>Living Church</i> (P.E.)
744 North Fourth Street, Milwaukee, Wis.</p> <p><i>Lutheran Herald</i>
425 S. Fourth Street, Minneapolis, Minn.</p> <p><i>Presbyterian Tribune</i>
70 Fifth Ave., New York City.</p> <p><i>Reconstructionist, The</i>
15 East 86th Street, New York City.</p> <p><i>Religion, A Digest</i>
2401 Military Road, Arlington, Va.</p> <p><i>Watchman-Examiner</i> (Baptist)
23 East 26th Street, New York City.</p> |
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COGNATE SOCIETIES AND RESEARCH INSTITUTIONS

(For further information, the reader may address the following organizations)

NATIONAL CHURCHES

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| <p>AMERICAN BAPTIST HISTORICAL SOCIETY,
Chester, Pa.</p> <p>AMERICAN UNITARIAN ASSN., 25 Beacon St., Boston, Mass.</p> <p>BOARD OF DIRECTION OF THE GENERAL SYNOD OF THE REFORMED CHURCH IN AMERICA, 156 Fifth Ave., New York City.</p> <p>CHRISTIAN SCIENCE CHURCH, 11 W. 42nd St., New York City.</p> <p>CONGREGATIONAL CHRISTIAN GENERAL COUNCIL, 287 Fourth Ave., New York City.</p> <p>FREE CHURCH OF AMERICA, 25 Beacon St., Boston, Mass.</p> <p>FREETHINKERS OF AMERICA, INC., 317 E. 34th St., New York City.</p> | <p>FRIENDS' GENERAL CONFERENCE OF THE RELIGIOUS SOCIETY OF FRIENDS, 1515 Cherry St., Philadelphia, Pa.</p> <p>GENERAL CONFERENCE OF SEVENTH-DAY ADVENTISTS, 6840 Eastern Ave., N.W., Takoma Park, Washington, D.C.</p> <p>GENERAL COUNCIL OF THE PRESBYTERIAN CHURCH IN THE U.S.A., 156 Fifth Ave., New York City.</p> <p>NATIONAL LUTHERAN COUNCIL IN AMERICA, 39 E. 35th St., New York City.</p> <p>NATIONAL SPIRITUALIST ASSN., 600 Penn. Ave., S.E., Washington, D.C.</p> <p>NORTHERN BAPTIST CONVENTION, 152 Madison Ave., New York City.</p> <p>SOCIETY FOR ETHICAL CULTURE OF NEW</p> |
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COGNATE SOCIETIES AND RESEARCH INSTITUTIONS

- YORK, 2 W. 64th St., New York City.
- THEOSOPHICAL SOCIETY OF AMERICA, Wheaton, Ill.
- UNION OF AMERICAN HEBREW CONGREGATIONS, 34 W. 6th St., Cincinnati, Ohio.
- UNION OF ORTHODOX JEWISH CONGREGATIONS OF AMERICA, 305 Broadway, New York City.
- UNITED LUTHERAN CHURCH IN AMERICA, 39 E. 35th St., New York City.
- UNITED SYNAGOGUE OF AMERICA, Broadway and 122nd St., New York City.
- UNIVERSALIST GENERAL CONVENTION, Inc., 16 Beacon St., Boston, Mass.
- VEDANTA SOCIETY, 34 E. 71st St., New York City.
- VOLUNTEERS OF AMERICA, 34 W. 28th St., New York City.
- INTERNATIONAL ORGANIZATIONS**
- ASSOCIATION FOR THE PROMOTION OF CHRISTIAN UNITY, Mission Bldg., Indianapolis, Ind.
- BAPTIST WORLD ALLIANCE, Bates College, Lewiston, Me.
- CENTRAL BUREAU OF EVANGELICAL CHURCHES IN EUROPE, 297 Fourth Ave., New York City.
- COMMITTEE ON FRIENDLY RELATIONS AMONG FOREIGN STUDENTS, 347 Madison Ave., New York City.
- ECUMENICAL METHODIST CONFERENCE, 720 Omaha Bank Bldg., Omaha, Neb.
- INTERNATIONAL ASSN. OF DAILY VACATION BIBLE SCHOOLS, 297 Fourth Ave., New York City.
- INTERNATIONAL ASSOCIATION FOR THE PROMOTION OF LIBERAL CHRISTIANITY AND RELIGIOUS FREEDOM, 25 Beacon St., Boston, Mass.
- INTERNATIONAL CONGREGATIONAL COUNCIL, 287 Fourth Ave., New York City.
- INTERNATIONAL COUNCIL OF RELIGIOUS EDUCATION, 203 N. Wabash Ave., Chicago, Ill.
- INTERNATIONAL SOCIETY OF CHRISTIAN ENDEAVOR, 41 Mt. Vernon St., Boston, Mass.
- LUTHERAN WORLD CONVENTION, 39 E. 35th St., New York City.
- NEAR EAST COLLEGE ASSOCIATION, Inc., 50 West 50th St., New York City.
- RELIGIOUS EDUCATIONAL ASSOCIATION, 59 E. Van Buren St., Chicago, Ill.
- UNIVERSAL CHRISTIAN COUNCIL ON LIFE AND WORK, 297 Fourth Ave., New York City.
- WESTERN SECTION OF ALLIANCE OF REFORMED CHURCHES THROUGHOUT THE WORLD HOLDING THE PRESBYTERIAN SYSTEM, 226 W. Mowry St., Chester, Pa.
- WORLD CONFERENCE FOR INTERNATIONAL PEACE THROUGH RELIGION, 70 Fifth Ave., New York City.
- WORLD STUDENT CHRISTIAN FEDERATION, 347 Madison Ave., New York City.
- WORLD'S SUNDAY SCHOOL ASSN., 156 Fifth Ave., New York City.
- INTERCHURCH ORGANIZATIONS**
- AMERICAN BIBLE SOCIETY, Park Ave. and 57th St., New York City.
- AMERICAN SUNDAY SCHOOL UNION, 1816 Chestnut St., Philadelphia, Pa.
- AMERICAN TRACT SOCIETY, 21 W. 46th St., New York City.
- CHAPLAIN'S AID ASSN., 401 W. 59th St., New York City.
- CHRISTIAN CO-OPERATIVE FELLOWSHIP IN NORTH AMERICA, 5757 University Ave., Chicago, Ill.
- CHURCH PEACE UNION, 70 Fifth Ave., New York City.
- COMMUNITY CHURCH WORKERS OF U.S.A., 77 W. Washington St., Chicago, Ill.
- CONFERENCE OF THEOLOGICAL SEMINARIES AND COLLEGES IN THE U.S.A. AND CANADA, Gettysburg, Pa.
- EPWORTH LEAGUE OF THE METHODIST EPISCOPAL CHURCH, 740 Rush St., Chicago, Ill.
- FEDERAL COUNCIL OF THE CHURCHES OF CHRIST IN AMERICA, 297 Fourth Ave., New York City.
- FELLOWSHIP OF CHRISTIAN CO-OPERATION, 2929 Broadway, New York City.
- FREE CHURCH OF AMERICA, 25 Beacon St., Boston, Mass.
- NATIONAL COUNCIL OF PROTESTANT EPISCOPAL CHURCHES, 281 Fourth Ave., New York City.
- NATIONAL RELIGION AND LABOR FOUNDATION, 304 Crown St., New Haven, Conn.

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SYNAGOGUE COUNCIL OF AMERICA, 1181 Broadway, New York City.

AUXILIARY ORGANIZATIONS

CATHOLIC CHURCH EXTENSION SOCIETY OF THE U.S.A., 306 N. Michigan Ave., Chicago.

CATHOLIC GUARDIAN SOCIETY, 485 Madison Ave., New York City.

CATHOLIC PROTECTIVE SOCIETY, 477 Madison Ave., New York City.

CHURCH LEAGUE FOR INDUSTRIAL DEMOCRACY, 135 Liberty St., New York City.

COMMUNITY CHURCH WORKERS OF THE U.S.A., THE, 1302 Chicago Temple, 77 W. Washington St., Chicago, Ill.

LORD'S DAY ALLIANCE, 156 Fifth Ave., New York City.

NATIONAL CONFERENCE OF CHRISTIANS AND JEWS, 300 Fourth Ave., New York City.

WOMAN'S CHRISTIAN TEMPERANCE UNION, 1730 Chicago Ave., Evanston, Ill.

WOMAN'S NATIONAL SABBATH ALLIANCE, 156 Fifth Ave., New York City.

YOUNG MEN'S CHRISTIAN ASSN., 347 Madison Ave., New York City.

YOUNG MEN'S HEBREW ASSN., 220 Fifth Ave., New York City.

YOUNG WOMAN'S CHRISTIAN ASSN., 600 Lexington Ave., New York City.

YOUNG WOMAN'S HEBREW ASSN., 31 W. 110th St., New York City.

RELIGIOUS PUBLICATIONS

AMERICAN BAPTIST HISTORICAL SOCIETY, Upland Ave., Chester, Pa.

AMERICAN BAPTIST PUBLICATION SOCIETY, 1701 Chestnut St., Philadelphia, Pa.

AMERICAN BIBLE SOCIETY, Park Ave., & 57th St., New York City.

AMERICAN TRACT SOCIETY, 21 W. 46th St., New York City.

CHICAGO TRACT SOCIETY, 440 S. Dearborn St., Chicago, Ill.

GIDEONS, 202 S. State St., Chicago, Ill.

NATIONAL TESTAMENT AND TRACT LEAGUE, 200 Kellogg Bldg., Washington, D.C.

POCKET TESTAMENT LEAGUE, 156 Fifth Ave., New York City.

RELIGIOUS EDUCATIONAL ASSN., 59 E. Van Buren St., Chicago, Ill.

SOCIETY FOR THE PROPAGATION OF THE FAITH, 462 Madison Ave., New York City.

MISSIONARY

AGRICULTURAL MISSIONS FOUNDATION, 156 Fifth Ave., New York City.

AMERICAN BOARD OF COMMISSIONERS FOR FOREIGN MISSIONS, 14 Beacon St., Boston, Mass.

AMERICAN MCALL ASSN., 112 E. 16th St., Philadelphia, Pa.

AMERICAN MISSION TO LEPERS, 156 Fifth Ave., New York City.

CHRISTIAN AND MISSIONARY ALLIANCE, 260 W. 44th St., New York City.

COMMITTEE OF REFERENCE AND COUNCIL, 156 Fifth Ave., New York City.

COUNCIL OF WOMEN FOR HOME MISSIONS, 297 Fourth Ave., New York City.

HOME MISSIONS COUNCIL, 297 Fourth Ave., New York City.

INTERNATIONAL MISSIONARY COUNCIL, 156 Fifth Ave., New York City.

MISSIONARY EDUCATION MOVEMENT OF THE UNITED STATES AND CANADA, 156 Fifth Ave., New York City.

NATIONAL COUNCIL OF JEWISH WOMEN, 1819 Broadway, New York City.

NEAR EAST RELIEF, 17 W. 46th St., New York City.

STUDENT VOLUNTEER MOVEMENT FOR FOREIGN MISSIONS, 156 Fifth Ave., New York City.

WOMAN'S UNION MISSIONARY SOCIETY, 45 Astor Place, New York City.

PART SIX

SCIENCE—APPLICATION AND PRINCIPLES

DIVISION XVIII

MATHEMATICS AND ASTRONOMY

MATHEMATICS

BY CHARLES N. MOORE*
PROFESSOR, UNIVERSITY OF CINCINNATI

MEETINGS AND PAPERS

During 1941 the American Mathematical Society met in New York City in February and October; in Chicago and at Stanford University in April; in Washington, D. C., in May; in Chicago, in September; in Manhattan, Kan., and Pasadena, Calif., in November; in Bethlehem, Pa., in December. The Mathematical Association of America held a summer meeting in Chicago in September in conjunction with the summer meeting of the Society. The annual meeting of the Association was held at Bethlehem, Pa. in December in conjunction with the annual meeting of the Society. Meeting with these two organizations were the Association for Symbolic Logic, and the National Council of Teachers of Mathematics. In connection with the meeting of the American Association for the Advancement of Science at Durham, N. H., in June, and the meeting of the A. A. A. S. in Dallas, Tex. in December, the mathematical section, Section A, held sessions for the presentation of papers and addresses.

* The author wishes to acknowledge with thanks the cooperation of Prof. Garrett Birkhoff, Mr. Ronald M. Foster, Prof. Saunders MacLane, Dr. R. W. Shephard, Prof. R. J. Walker, and Prof. S. S. Wilks, who furnished material concerning advances in various special fields.

At these various meetings, as has been the custom, a certain number of special addresses delivered at the invitation of officers and committees of the organizations, were presented. The number of these addresses and the variety of topics treated were approximately the same as in recent years. An idea of the range and scope of these programs may be gained from consulting the articles on mathematics in the past few issues of *THE AMERICAN YEAR BOOK*, where details as to names of speakers and topics have been given. Such details are omitted in the present article in order to leave more space for an account of progress in the science, as shown in published research papers. Those who wish more details may find them in reports of the meetings, as published in the official journals of the two mathematical organizations, the *Bulletin of the American Mathematical Society* and the *American Mathematical Monthly*.

SYMPOSIUMS AT UNIVERSITIES

A symposium on mathematical economics was held at the University of Notre Dame, Feb. 28 and March 1, 1941. The following addresses were given: "Functionals in the Theory of Economics," Prof. H. T. Davis; "The Theory of Technological Unemployment," Prof. Oscar Lange; "Problems

of Valuation and Rate-making, in Public Enterprises," Prof. Harold Hotelling; "The Dynamics of Commodity Prices," Dr. C. F. Roos; "Statistical Cost-curves and Price Policy," Prof. Joel Dean; "The Determination of Weight-functions for Dynamic Economics," Dr. Franz Alt; "Unexpected Effects of Certain Taxes," Prof. Harold Hotelling; "On the Solvability of the Walrasian System of Equations," Dr. Abraham Wald; "The Geometrical and Arithmetical Determination of the Index of Prices," Prof. Karl Menger.

A symposium on algebra was held at the University of Cincinnati, Nov. 15. The following addresses were presented: "Non-Associative Algebras," Prof. A. A. Albert; "Vector Lattices," Prof. Garrett Birkhoff; "The Use of Matrices in Algebraic Number Theory," Prof. C. C. MacDuffee.

FUNCTIONS OF COMPLEX VARIABLES

Among the important properties of functions of a complex variable are their laws of growth, namely, laws which show the rate at which the absolute value of the function increases when the absolute value of the variable increases while behaving in some other specified manner. In a paper by P. W. Ketchum in the *Transactions of the American Mathematical Society* it was shown that, given any sequence of points in the complex plane having the point at infinity as a limit point, it was possible to find a set of regions including these points and a related integral function such that the rate of growth of the minimum absolute value of the function in the successive regions could be made arbitrarily large.

In a paper by Abe Gelbart, appearing in the same publication, the rate of growth of a function of two complex variables, in terms of the coefficients of its power series expansion, was investigated. The growth was studied along certain two-dimensional surfaces lying in analytic hypersurfaces which bound regions in which the function is analytic. In this study a formula of Bergman,

which may be regarded as a generalization to functions of two variables of the classical Cauchy integral formula, was used to advantage.

INFINITE SERIES

In connection with the summation of infinite series, one of the important methods is due to Hausdorff. In this method, certain sequences of complex numbers, which are used in setting up transforms of the sequences arising from the partial sums of the given series, play a central role. It is important to know under what conditions the Hausdorff definition corresponding to one sequence includes that corresponding to a different sequence. In a paper by H. L. Garabedian, Einar Hille, and H. S. Wall, this inclusion problem is studied and several equivalent criteria for settling the question are established. This study is related to some previous work of Hille and Tamarkin.

An important method of investigating the convergence of infinite series is the one known as Tauberian, since the first special instance of it was given by Tauber in 1897. In this method the convergence of the series is deduced from its summability by means of some standard method, plus a supplementary condition. Such supplementary conditions are naturally designated as Tauberian conditions. In a paper which appeared in the *Annals of Mathematics*, R. P. Agnew has obtained certain new Tauberian conditions and studied the relationship between the Tauberian classes of series corresponding to these conditions and to others previously obtained.

THEORY OF FUNCTIONS OF REAL VARIABLES

In the theory of functions of a single real variable, the fundamental notions of bounded variation and absolute continuity have a unique definition. When a generalization of these notions to functions of two variables was undertaken, it was found that such generalizations could be made in more than one way. In a paper which appeared in the *Duke Mathematical*

Journal, M. S. Macphail studied methods of generating functions of bounded variation of several different types. A connection is established between such functions and the first two of the Baire classes of functions. In a paper which appeared in the *Transactions of the American Mathematical Society*, T. Rado and P. Reichelderfer made an extensive study of a new and more comprehensive theory of absolute continuity, as related to transformations in the plane.

ALGEBRA

Quadratic Forms.—A famous conjecture of Minkowski has to do with quadratic forms with integral coefficients and their equivalence under non-singular linear transformations. The conjecture asserts that two such forms are "semi"-equivalent if for each prime number p the forms are equivalent for the domain of all p -adic integers. This conjecture was proved this year by Siegel.

Linear Algebras.—The study of linear algebras has been active. Albert has found results on general non-associative algebras, while R. Brauer and M. Hall have begun a systematic attack on the structure of non-semi-simple algebras of matrices. The recently discovered connection between Lie algebras of prime characteristic and groups of prime power order has been exploited vigorously by Hooke, Jacobson, Jennings, and others. McCoy has shown that E. H. Moore's methods make it possible to extend many of the properties of ordinary determinants to number systems in which the multiplication is not commutative. A. A. Albert, O. F. G. Schilling, and MacLane have found results on p -adic fields and on algebraic number fields.

Lattice Theory.—Activity in lattice theory continued, with important papers by Clifford on partially ordered groups, by Dilworth on the structure of lattices, and by Whitman on free lattices. After a lapse of many years, the algebra of relations has experienced a strong revival. Tarski and McKinsey have considered the postulational and logical aspects of the

theory of relations, while Ore has examined the algebra of relations as a prelude to lattice theory. Applications of ideal theory and lattice theory to rings of continuous functions have been developed by Stone, Kakutani, R. S. Phillips, and Segal.

The algebraic operation of the substitution of one polynomial in another has been analysed by Engstrom, who obtained a purely algebraic proof of Ritt's unique decomposition theorem for such substitutions.

The year was also noteworthy for the publication of three textbooks on algebra by Albert, G. Birkhoff and S. MacLane, and MacDuffee, respectively.

THEORY OF NUMBERS

One of the classical unsolved problems of mathematics is the demonstration of the theorem that the equation $x^p + y^p = z^p$ has no solution in integers for p greater than 2. This theorem was first formulated by Pierre Fermat (1601-1665) who claimed to have a proof which he did not write down because the margin of the Greek work on mathematics which he was annotating was not sufficiently extensive to contain it. While a complete demonstration has eluded all efforts of mathematicians since the days of Fermat, progress in the discussion of special cases continues to be made. Two recent articles in the *Bulletin of the American Mathematical Society* by Barkley Rosser and D. H. and Emma Lehmer enable us to conclude that for the first case of Fermat's theorem, namely, the case where x , y , and z are prime to p , there is no solution in integers for $p < 253,747,889$.

TOPOLOGY IN GEOMETRY

The branch of geometry which receives the most attention among modern mathematicians is known as Topology. It is concerned with those properties of figures which are unaltered by any twisting, bending, or stretching of the figures. Thus in topology we are not interested in whether a figure is composed of straight lines, or in the area of the figure, but rather in such questions as

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whether the figure has an inside and an outside, or whether it can be drawn with a single stroke of the pencil. Topological considerations, since they involve the basic concepts of geometry, are of importance in almost all branches of mathematics.

A manifold is a topological figure which has a certain smoothness; for example, the surface of a sphere. Although manifolds are among the simplest of topological objects and have been studied for many years, there is still very little known about their general properties. An important class of problems concerning manifolds deals with the possibility of constructing coordinate systems on a manifold. Considerable work on such problems has been done by S. S. Cairns who has recently given some very simple conditions under which the construction of coordinate systems is possible. The important condition is the possibility of cutting up the manifold into certain types of smaller pieces (in the case of a 2-dimensional manifold, for instance, the pieces would be curvilinear triangles). The auxiliary conditions require that the pieces be fitted together in the manifold in such a way that no two pieces are tangent to each other. Questions of a similar type have been investigated by J. H. C. Whitehead. Working from the other direction, he shows that if a manifold has a certain type of coordinate system on it, then various important topological consequences can be deduced.

Much of topology is concerned with *transformations*, operations which associate with each point A another point B. In a paper appearing in the *Annals of Mathematics*, Montgomery and Zippin have proved some interesting theorems concerning groups of transformations. By the "orbit" of a point A is meant the set of all points obtained by transforming A by each transformation of the group. It is shown that there is a close relation between the structure of the orbit of any point and properties of the group of transformations. These relations can be used to obtain information about both the orbits and the group.

A transformation in an n -dimensional manifold is said to be "measure preserving" or to be a "flow" if the n -dimensional measure (area if $n = 2$, volume if $n = 3$, etc.) of any portion of the manifold is not changed by the transformation. Such transformations are encountered in many fundamental problems of mechanics, for instance, in the famous "three body problem" of astronomy, and are of considerable interest to theoretical physicists and chemists. A type of flow which is of special interest in its physical applications is called "metrically transitive." From the way in which this term is defined it turns out that the problem of deciding whether or not a particular flow is metrically transitive is extremely difficult. As a consequence, until recently only a very few examples had been given of metrically transitive flows, and it was not known in general whether a manifold could contain a metrically transitive flow or not. This situation has now been remedied by Oxtoby and Ulam. They have shown that there are metrically transitive flows on all manifolds of dimension three or greater. In fact, they have proved the much stronger statement that of all possible flows on a manifold almost all of them (in a certain sense) are metrically transitive. This result is a purely topological one and has no immediate bearing on the physical applications of flows, where only those flows arising from mechanical systems are of importance. Nevertheless, it represents an important step forward in the general mathematical theory, and suggests new problems and methods in this field.

In the investigation of topological problems many different methods are used. Most of these were originally borrowed from other branches of mathematics, particularly analysis and algebra, and have now been extended and generalized in many directions. In a recent publication of the *Annals of Mathematics Studies*, J. W. Tukey has presented a comprehensive account of those topological concepts which center about the notions of continuity and uniformity. By making

use of the recently developed technique of lattice theory he is able to present an integrated and very general treatment of many of the basic concepts of modern topology.

APPLIED MATHEMATICS

General.—Many important advances in the applications of mathematics to physical and engineering problems were made during the year, but, owing to the fact that many of these applications were concerned with problems of national defense, the amount of work done in this field was not reflected in the amount of material published. This state of affairs will undoubtedly continue until the present emergency is over.

Electromagnetic Waves.—Based on the pioneering work of G. N. Watson a rigorous theory of the propagation of electromagnetic waves around a spherical earth was developed in the past 20 years. In practice, unfortunately, the computations required were lengthy and involved. To remedy this situation, C. R. Burrows and M. C. Gray presented a comprehensive series of curves to facilitate these computations, in the *Proceedings of the Institute of Radio Engineers*. From these curves may be obtained the electric field for any values of the constants of the earth, based on a shadow-factor curve, the shadow-factor being the ratio of the field received over a spherical earth to that which would be received over a plane earth having the same values of the constants.

Settlement of Soils.—The settlement of soils under load is caused by a phenomenon called consolidation whose mechanism is known to be in many cases identical with the process of squeezing water out of an elastic porous medium. The mathematical consequences of this point of view were established by M. A. Biot in a series of articles in the *Journal of Applied Physics*. The number of physical constants necessary to determine the properties of the soil was derived, along with the general equation for the prediction of settlements and stresses in 3-dimensional problems.

Particular attention was given to rectangular load distributions, including the determination of the settlement of the soil in the immediate vicinity of the edge of the loaded area.

Elastic Plates.—The mathematical problems connected with the bending and buckling of elastic plates were extensively investigated. The behavior of a thin flat plate subjected to compressive forces at its edges is quite complicated; the plate will become unstable and buckle when the compressive forces reach certain critical values, but the forces can be increased considerably above such values without causing collapse of the plate. J. J. Stoker and K. O. Friedrichs found that as the load is increased beyond the buckling point the interior of the plate is put into tension and nearly all of the applied load is carried by a narrow strip or boundary layer at the edge of the plate.

Meteorology.—Recently mathematics has come to play an increasingly important part in many meteorological problems. Many major features of atmospheric pressure charts, such as the Icelandic and Aleutian low pressure areas and the Pacific and Bermuda high pressure areas, change but slowly with time; and it has been observed that these systems seem to control the paths of storms. A mathematical theory was developed by H. J. Stewart to apply to such systems, with the view of explaining their existence and the factors which control their size and spacing. From this theory it appears that the spacing of these systems is probably determined by certain wave disturbances in the westerly winds. The systems themselves are best thought of as vorticity concentrations which occur as a result of the dynamical instability of the shearing motion which is found on either side of the belt of westerly winds.

STATISTICAL HYPOTHESES

The theory of testing statistical hypotheses, i.e. testing hypotheses which are assumptions about the distribution laws of observable variables, has been extended along two lines.

According to the theory, a test consists in the specification of a subset of the possible samples, called the critical region, and rejecting the hypothesis whenever the observed sample falls within this region. Two kinds of errors may be made in using any particular test; (1) the hypothesis H may be rejected when it is true or (2) H may fail to be rejected when some alternative hypothesis is true. Ordinarily tests are designed to make the probability of committing an error of the first kind some prescribed small value or, what is the same, to make the frequency of rejecting a true hypothesis in repeated applications of the test some small value, say .01. For the test to be efficient, however, the frequency of committing an error of the second kind must also be made small, but the design of a test usually cannot satisfactorily meet this requirement, since the probability of making the second kind of error depends on the alternative hypothesis which happens to be true. That is, a test may have a small probability of making the second kind of error, if one alternative hypothesis is true, and not a small probability for another alternative.

Those tests having a minimum probability of error of the second kind, regardless of the alternative hypothesis which happens to be true, are called uniformly most powerful tests. In general, uniformly most powerful tests cannot be found, although they have been developed for special cases. A. Wald has shown that, if tests are designed according to the principle of maximum likelihood and the critical region determined so as to make the probability of an error of the first kind some small value, they tend to have analogous properties to those of uniformly most powerful tests when the number of observations in the sample is increased.

Aside from this difficulty of finding uniformly most powerful tests, some problems arise due to the form of the hypothesis to be tested. If the hypothesis completely determines the distribution law of the observable variable, it is called simple and the pro-

cedure of finding a test is standard. On the other hand, the hypothesis may leave unspecified some unknown parameters. Then it is called composite, and the designing of a test to control the two kinds of errors is accordingly complicated. Some special composite hypotheses have been reduced to equivalent simple ones. G. W. Brown found the rather general result that composite hypotheses may be reduced to equivalent simple one, if the unspecified parameters are those of "location" or "scale," that is, parameters like the mean and standard deviation.

STATISTICAL PROBLEMS OF MASS PRODUCTION

Turning now to practical problems, there are two interesting developments in routine analyses such as are performed in sampling inspection of mass production. The usual procedure is to take small samples of the same product at specified times, say five times a day, and from them an estimate is made of a quality characteristic of the product. For any one small sample the confidence interval, i.e., an interval for which the probability is some specified value, say .99, that the true value is contained in it, is ordinarily large and diminishes as the size of the sample is increased.

If it is known, however, that the variability of estimate from sample to sample is kept constant, the sample estimates may be combined into one large sample and an estimate made with a concomitant decrease in the length of the confidence interval due to the increased sample size. It is, therefore, important to be able to test for constant variability of estimate from one small sample to the next. J. Neyman has developed a powerful test of this hypothesis for those situations where the variability may be assumed to vary randomly about some standard value, a situation which is likely to obtain if the process of production is one where efforts are made to maintain a constant state of the quality of production.

Another statistical problem of mass

production is that of calculating a tolerance range for a sample estimate of a quality characteristic, *i.e.* the determination of an interval about the sample value within which a stated proportion P of the universe of values will lie. This tolerance range may have various degrees of stability depending upon the size of the sample. S. S. Wilks has given a method of determining the sample size in order that, for a given method of finding the tolerance range, the probability be some specified value, say .9, P will lie within a small pre-assigned interval.

THE SAMPLING THEORY

In general during 1941 the principal American advances in mathematical statistics have continued to be in the field of sampling theory and its application to the testing of statistical hypotheses and the estimation of population parameters. A. Wald has made several important contributions to the theory of testing statistical hypotheses for the case of large samples, one of which has been discussed above. He and R. J. Brookner have also obtained further results on the problem of testing the hypothesis of independence of several sets of normally distributed variables originally studied by S. S. Wilks in 1935. C. T. Hsu has considered some new statistical hypotheses relating to the normal bivariate population. E. Paulson has presented some results on statistical hypotheses arising in the case of the exponential distribution law. H. Hotelling has obtained interesting results on the problem of determining the maximum of a given function from a sample of observations, and has studied the sampling theory involved for large samples. A. M. Mood has published results on the simulta-

neous distribution of medians of samples from a multi-variate population, and has shown that certain simple functions of the sample medians have a limiting normal multivariate distribution as the sample size increases indefinitely. Other studies on the sampling theory of "order statistics" were made by E. J. Gumbel in a paper on the return period of flood flows and by S. S. Wilks in the paper referred to above.

The sampling theory of the mean square of successive differences in a sample from a normal population and the ratio of this mean square to the sample estimate of the population variance was studied extensively during 1941. The exact moments of this ratio were determined independently by J. D. Williams and L. C. Young by different methods. The exact sampling distribution of the ratio was established by J. von Neumann, who, together with R. H. Kent and others at Aberdeen, made a thorough study of the mean square of successive differences early in the year. These studies may be regarded as dealing with the problem of testing the hypothesis of secular changes in a time sequence of observations. Applications of the theory of runs to time sequences have been made by E. L. Dodd, F. C. Mosteller, W. A. Wallis, and G. H. Moore.

W. Feller has made a comprehensive study of the integral equation arising in renewal theory. J. H. Curtiss has made a rather exhaustive study of the quotient of two random variables. L. A. Aroian has made a very detailed study of R. A. Fisher's distribution.

Virtually all the American contributions to mathematical statistics during 1941 have been published in the *Annals of Mathematical Statistics*.

ASTRONOMY

BY JOHN E. MERRILL

PROFESSOR, HUNTER COLLEGE

INSTRUMENTAL DEVELOPMENTS

The Harvard coronagraph at the Climax station in Colorado, described in 1940, has been put into final adjustment, and Roberts has succeeded in photographing the solar corona and also its spectrum. The new 20-inch Ross refractor at the Lick Observatory has been installed and tested; in the efficient hands of Wright and his colleagues this wide-angle high-speed telescope, the largest of its kind in the world, will contribute enormously to galactic and extra-galactic studies.

Work on the mirror of the 200-inch telescope has been progressing satisfactorily of late. The glass was found to distort minutely under its own great weight when tipped on edge for testing and a system of squeeze-levers actuated by counterweights around the glass, has been installed to take care of the effect.

Two Schmidt telescopes have been set to work, the 24-33 inch at the Oak Ridge station of Harvard and the 24-37 inch at the Warner and Swasey Observatory of Case School of Applied Science; both will be devoted largely to galactic-structure studies, to which such instruments are ideally suited. The Case Schmidt, with a 37-inch Pyrex mirror, aluminum-on-chromium, and a 24-inch correcting plate, carries a circular plateholder 8 inches in diameter and gives a usable field of $5^{\circ} 4'$ width; the focal length is 84 inches. A twin to the Harvard Schmidt is under construction for the new Mexican National Observatory at Tonanzintla, Puebla. The mechanical parts are being made at Harvard and the optical work done by Perkin-Elmer. The 48-72 inch Schmidt for Mt. Palomar is progressing well.

Wyse and Mayall, investigating the increased speed of two Lick spectrographs after coating of the surfaces of the prisms and lenses with metallic

fluorides, find that for each the light transmission is slightly more than doubled. The gain does not seem to depend very strongly on the wave length of the incident light. Exposure time for the fainter spectra will, they estimate, be cut to less than one-half the former intervals, perhaps to one-third.

Zwicky reports that very promising results have been obtained from a preliminary mosaic objective grating used with the 18-inch Schmidt telescope at Mount Palomar. The six gratings of the mosaic were 5-by-7 inch replicas of a Wood grating throwing about half the incident light into one first-order spectrum, individually sandwiched between glass plates. A suitable framework mounted in front of the Schmidt correcting-plate carried the "sandwiches." With slightly less than two-thirds of the full aperture of the Schmidt thus covered with the mosaic grating, a one-hour exposure produced usable spectra of stars down to 11.5 apparent magnitude. Improvements in the method of mounting are under way.

SUN

One of the two most important advances in astronomy for 1941 was made by Edlen of Upsala, Sweden. He has succeeded in identifying 15 of the enigmatic coronal lines, supplying 97% of the coronal radiation. It has been generally supposed that the atoms in this tenuous atmosphere of the sun would all be neutral, singly ionized or at most doubly ionized. But Edlen has identified beyond doubt seven lines due to iron from nine to thirteen times ionized, two due to calcium 11 and 12 times ionized, and six to nickel with from 11 to 15 electrons removed. The question of how the elements can be maintained at such high levels of ionization above the $6,000^{\circ}$ photo-

sphere of our sun is very difficult; energies of 200 to 600 electron-volts are required. The wide coronal lines may perhaps mean random velocities up to 30 km/sec keeping the stuff ionized.

The only notable total eclipse of the sun in 1941 occurred on Sept. 21, with the track extending from the Caucasus across China into the Pacific Ocean. Russian astronomers had made extensive plans for its observation, but it is not at present known whether the outbreak of the Russian-German war prevented the prosecution of them.

Richardson has examined all the Mt. Wilson hydrogen spectroheliograms for the direction of whirl. The number of vortices showing a well-defined direction turns out surprisingly small; only about 230 spectroheliograms covering the years 1908-1939 were used. No correlation is apparent between vortical whirl and spot-polarity, but 80% of the whirls are simply such as would occur if solar rotation were the dominating factor as the earth's rotation is in the case of cyclones.

Blanch, Lowan, Marshak, and Bethe have collaborated on an accurate numerical computation of the internal distribution of temperature and density for the sun, using the point-convective model and Ström-gren's tables of the "guillotine factor" which enters into the opacity of the matter. The hydrogen content requires fixing at 35% by weight if the helium abundance is assumed zero and the rest as "Russell mixture" to produce a mean molecular weight of unity. The computation leads to a central temperature of 26,000,000° and a central density of 110 grams/cubic centimeter or 78 times the mean density. The convective core, in which all the energy is assumed to be produced, occupies one-eighth of the solar radius.

SOLAR SYSTEM

The most important single astronomical event of the year, by far, is the publication by Spencer Jones, the Astronomer Royal, of the results of

the reduction of the photographic observations of Eros made at the 1930-1931 opposition to determine the solar parallax. Almost 25,000 exposures on 3,700 plates taken in 20 countries of the world have been treated under the direction of this outstanding expert in the field. The parallax finally deduced is 8." 7,900 with an uncertainty from all causes (instrumental, atmospheric, etc.) of about 0."001 and corresponds to a distance of the sun from the earth of 93,010,000 miles and a solar diameter of 865,400 miles, both 0.15% larger than the previously-used values. The program of observation was laid out with extreme care in advance; all observatories followed the same procedure of "interrupted exposures," the observations were corrected in most painstaking fashion to allow for systematic errors due to use of different telescopes, etc. We must now know the average distance of the earth from the sun to one part in ten thousand.

Elvey, Swings and Linke have assembled a complete list of all the emission lines certainly present in their spectra of the night sky obtained with the big nebular spectrograph at McDonald Observatory. Trustworthy possible identifications are lacking for only eight of the 52 lines given, covering the regions from $\lambda 3100 \text{ \AA}$ to $\lambda 6600 \text{ \AA}$. Sodium and oxygen give atomic lines while the molecules O_2 , N_2 , NO certainly and OH, NH, and CH probably, contribute to the sky emissions.

There were auroral displays and radio-fadeouts associated with solar activities on March 1, July 5, and Sept. 18. The July aurora was not seen from northeast United States because of clouds, but the September display was reported from all over the country. It was one of the most spectacular on record for eastern United States, though not so highly colored as some have been. "Search-lights," curtains, arches, and undulations all showed vividly, and the culmination of the spectacle was a zenithal "umbrella" extending halfway down the sky. The associated sun-spot group was easily visible to

the naked eye for almost a week.

Peek, observing the surface of Jupiter, recorded a spot on the northern edge of the South Temperate Belt during the last four months of 1940, which decreased in longitude in an oscillatory fashion. He finds that the motion of the spot relative to the surface can be represented by that of a large solid mass of light matter, comparable in diameter to our moon, floating in the very dense gases of the Jovian atmosphere and oscillating vertically with a period of about two months. Damping of the vertical oscillation by fluid resistance would cause the smoothing of the rotation speed of the spot into agreement with its surroundings which appears in Peek's diagrams. Recurrences of such phenomena may lead to considerable information on the structure of the Jovian atmosphere just below the level of observation.

Discovery of only one asteroid has been reported; this one, with an average distance from the sun of 2.85 astronomical units, was found by Willis on Naval Observatory plates. It is small and faint.

COMETS

Of the nine comets discovered during the year, four were returns of known objects: Encke's, Schwassmann-Wachmann I, Schwassmann-Wachmann II, and Whipple's. Clarence Friend of California discovered his second comet in January; Paraskevopoulos, van Gent, du Toit and Neujmin also found new comets. It was peculiarly difficult to assign priority of discovery this year because of obvious obstruction to communication; it will be perhaps fairer to list the new comets, from Friend through Neujmin, in the impersonal fashion of their discovery letters in the order given above: 1941 a, c, d, e, and f. None of these comets was a bright object except 1941c Paraskevopoulos, which had a total brightness about equal to that of Jupiter in late January, when both it and Cunningham's Comet of 1940 were simultaneously visible to the naked eye for southern-hemisphere observers; at its best it

had a tail, visible in the telescope, about 20° in length. Comet Friend II, 1941a, has a definitely elliptical orbit. Encke's Comet was putting in its fortieth successive recorded apparition.

Swings, Elvey, and Babcock obtained a long series of spectra of Cunningham's Comet with high dispersion, extending much further into the ultra-violet than previous work. They found resonance bands of OH and NH near $\lambda 3100 \text{ \AA}$ and $\lambda 3360 \text{ \AA}$ respectively. The strength of the bands indicates fairly high abundance of the hydrides, about equal to that of CN. Under ordinary conditions, the high-rotational levels and the low ones will be most populated at high and low temperatures, respectively, as a result of collisions, but in the comet densities are so low that collisions are practically absent. The "rotational temperatures" of 300° K and 50° K , implied by the CN bands in the McDonald spectra, probably are results of absorption of sunlight offsetting for the molecules the natural tendency to slow down their rotations. It is suggested that the two levels of "rotational temperature" imply two distinct processes of dissociation yielding the incomplete molecules CN.

STARS—GENERAL

The great *General Catalogue* published by Boss and his associates at the Dudley Observatory in 1938 is such a mine of information on geometrical and dynamical phases of astronomy, that great care must be taken to keep its tabular entries abreast of improved knowledge of the fundamental constants. Smart has published tables of the systematic corrections to be applied to the proper motions of the *General Catalogue*, in each coordinate, to make proper allowance for the newer determinations of the precessional constants and for the effect of the now well-defined galactic rotation. These corrections are, of course, very small, ranging in fact from $0.''00$ to $0.''075$ per century numerically, but will be of importance

in statistical discussions, especially of the fainter stars.

Paul Merrill has summarized all known measurements on the radial velocities of 305 long period variables of types Me and Se and finds an apparent group motion opposite to the direction of the sun's galactic rotation as has been found with other high speed stars. He finds a marked correlation of peculiar velocity with period of light variation; the stars of shorter period show the higher velocities. R. E. Wilson, from 173 long period variables mainly in the G C, finds Se type stars have both parallaxic and peculiar motions considerably less than those of Me. The absolute magnitudes seem to be about -1 for both on the average, with the shorter period and earlier Me stars at -3 . These results and those of Merrill above are not necessarily contradictory; the principal puzzle lies in the very existence of any apparent connection of space motions with physical characteristics for whole classes of stars.

R. E. Wilson has assembled all the available material bearing on the intrinsic brightness of 246 non-variable "c-stars," which are super-giants characterized by unusually sharp spectral lines. His treatment of the parallaxes brings into view an almost-linear relation between luminosity and spectrum, with the very blue BO stars rated 12,000 and the orange K5 stars 500 times as bright as our sun. These results are confirmed in character by an independent investigation by Greenstein along somewhat different lines. Of special interest is the point advanced by Wilson that the band of non-variable c-stars lies on the spectrum-luminosity diagram almost at right angles to the band of Cepheid variables, all c-stars as well. He has continued his investigation of luminosities of giant stars by deriving from the observational data available on nearly 1,500 blue stars the relation between intrinsic luminosity and spectral type. Having excluded the c-stars already treated, which form a definitely brighter sequence, he shows that the relation of intrinsic

brightness of the ordinary O5=B5 stars to spectral type is nearly linear with the O5 end at a level 3,000 times and B5 200 times as bright as the sun. Wilson finds also that the presence of emission lines in the blue stars does not change their mean intrinsic luminosity.

Prager has published as volume III of the Harvard Annals the *History and Bibliography of the Light Variations of Variable Stars for the Years 1931-38*, giving the pertinent information on 3,592 stars recognized as variable and therefore put on the *Benennungsliste* of the *Astronomische Gesellschaft*, between 1931 and 1938. Dr. Prager was forced to leave Germany some years ago, with the third volume of his indispensable *Geschichte und Literatur des Lichtwechsels der Veranderlichen Sterne* about three-fourths completed. The present publication would under ordinary circumstances have been the fourth volume of the *Geschichte*, it stands as one more arrow marking the westward motion of the center of astronomical activity.

Fruits of the program of search for novae and super-novae in exterior galaxies continue to appear. Since Zwicky inaugurated his program at Palomar, some 20 super-novae have been discovered there alone, one-half of all the super-novae discovered since the "star of 1885" in the Andromeda Nebula. Minkowski has found that super-novae fall sharply into two groups differing radically in spectrum, maximum luminosity, and character of light variation. Super-novae of Group I show light curves very similar in form to that of ordinary novae, but the luminosity at maximum averages about 400,000,000 times the sun's. The spectra are radically different from any others known, consisting entirely of emission bands mostly of several hundred angstroms width; the only features so far recognized are two relatively narrow bands in the red appearing some five or six months after maximum, believed to be due to oxygen. Super-novae of Group II reach maxima of about 10,000,000 times the sun's brightness

and have spectra somewhat resembling ordinary novae. They show a decided hump on the descending branch of the light-curve, or a slow fading for a few weeks after maximum, followed by a much more rapid fall in brightness.

STARS—SPECIFIC

O. C. Wilson has published preliminary results from spectrograms taken during the 1939-40 total eclipse of Zeta Aurigae, an eclipsing system of period $2\frac{2}{3}$ years composed of a B-star and a K-type giant. As in Epsilon Aurigae and others, just before and just after totality the light of the smaller, hot component comes through the extended atmosphere of the giant and causes a sequence of spectral changes which can be utilized to determine the structure of that atmosphere. Wilson finds great turbulence in the atmosphere of the K-star and finds that this turbulence increases with height above the K photosphere. Excitation temperatures range from $3,800^{\circ}$ to $5,600^{\circ}\text{C}$ from lower to middle atmosphere as determined from lines of neutral iron.

McKellar has three spectra of WZ Cassiopeiae, type N1p, obtained in the latter part of 1940, in which absorption lines at 6708\AA and identified as belonging to neutral lithium are very strong, second in strength in the yellow-red only to the D-lines of sodium. This is the first celestial body except the sun in which lithium is observably present; McKellar has spectra of a dozen other R and N type giants, but none of these spectra shows the lithium lines. WZ Cassiopeiae may be of exceptionally high lithium content and of some importance in the future observational confirmation or otherwise of Gamow's theory that energy production in late-type giants depends upon the destructive interaction of lithium, beryllium, and boron in yellow and deuterium in red, giants. WZ Cassiopeiae lies far to the right of the "lithium track" in Gamow's "evolution-diagram" and may, therefore, be thought of as a star which has not yet begun to draw on its lithium for sustenance.

Van Maanen finds Ross 128 and Luyten 789-6 to be classed among our near stellar neighbors, at about 10 light-years distant. The star Luyten 745-46 is found by both Luyten and Stearns to be a little less than 20 light-years distant; Luyten has found it to be probably a white dwarf and if the magnitudes he derives from Steward plates are reliable, the diameter of this star must be of the order of that of the moon, so that its density must be 100,000,000 times that of water.

Huruhata has found that Miss Boyd's variable of 1937 was a supernova in the galaxy IC 4652. Four super-novae have been discovered during 1941; Miss Jones found one in NgC 4559 and one in NgC 4136. This latter star reached an intrinsic brightness of about 7,000,000 suns, according to Humason and Minkowski; the spectrum was of Minkowski's type II. A third super-nova was discovered by Johnson in the edgewise spiral NgC 3254 in March, and a fourth by van Maanen in June in NgC 6181. Each of these, as is usual with super-novae, outshone its whole galaxy by factor of ten or more.

INTERSTELLAR MATTER

Stebbins, Huffer, and Whitford have measured the colors of 160 A-type stars within 10° of the north pole of rotation and within 30° of the galactic poles; spectra were determined for this study at Yerkes and Mt. Wilson. The selective absorption determined from the colors and by the help of previously-observed B-stars is 0.2 magnitude per kiloparsec in the direction of the rotational pole and 0.1 toward the galactic pole. It appears, therefore, that the absorbing layer along the galactic plane is probably not more than 500 parsecs in thickness, and the total photographic absorption therein is about one magnitude per kiloparsec.

Spitzer, studying the dynamics of the interstellar medium has shown that, if the matter is a mixture of metallic "dust" particles, electrons, and neutral and ionized atoms and molecules, collisions with electrons

will be much more frequent than those with positive ions, and the dust particles will be maintained at a negative potential of about two volts regardless of their composition or size, provided the number of free electrons is not less than one per 1,000 cc, which is probably below the electron-density for most regions. He has also shown that the random velocities of the dust particles and the ions should be very small because equipartition of energy should come about under interstellar conditions in something of the order of 100,000 years.

Spitzer also shows that two dust particles in a field of isotropic radiation will be forced towards each other because of differential radiation pressures due to the shadowing of each by the other. The average "force of radiational attraction" between any two such particles is actually of the order of 100 times the gravitational force; but even so, the matter will be kept dispersed by the localized anisotropic radiation of nearby stars.

The presence of molecules of CN and CH in interstellar matter has been demonstrated by McKellar and Adams by identification of lines each of which is the final residual of a whole band system. The bands are reduced in effect to lines by the tenuity of the interstellar medium; the molecules have plenty of time to go step-by-step down through the possible rotational and oscillatory transitions to the ground-state or zero-energy level, and thus in general will be able to absorb passing starlight only in the one corresponding line. At the recent Yerkes conference on spectra it was suggested that three of the four sharp interstellar lines ($\lambda 4232.58$, $\lambda 3957.72$ and $\lambda 3745.33$ Å, the fourth being $\lambda 3579.04$ Å) hitherto unidentified, might arise from diatomic hydride molecules; ionized CH was favored as the best possibility. Upon their return to Saskatchewan, Hergberg and Douglas, by passing a discharge through helium containing a trace of C_2H_2 , produced bands of ionized CH in which the residual lines agree almost perfectly in wavelength

with the three mentioned above. We thus have in the observed presence of CH in both neutral and ionized molecules a very promising avenue for the determination of the density of free electrons in space more precisely than it has been possible to do from neutral and ionized calcium because of the weakness of the ionized calcium line.

EXTERIOR GALAXIES

Shapley finds, from Miss McKibben's measures on the variable stars in the globular cluster 47 Tucanae, that those long-period variables having well-determined light-curves (if members of 47 Tucanae) must be photographically about 2,500 times as bright as our sun intrinsically. Long-period variables are usually supposed to be only 1/25 as bright as this. The conclusion rests, of course, on that assumption that the three are really members of the cluster, but the probability that they are foreground objects is low. It appears also that 47 Tucanae should be considered as a giant globular cluster, really in the class of the smaller galaxies such as NGC 6822 and Shapley's Cluster in Sculptor.

Zwicky has found that the cluster of galaxies in Hydra, listed by Shapley as containing 56 members down to magnitude 13, has some 374 members down to magnitude 16 within a radius of little more than four degrees from the center of the cluster. It is probable that the total population is 500 or more and the diameter of the cluster about 4,000,000 light years, making this a fairly compact group.

Wyse and Mayall have shown, from their own and Allen's observation of radial velocities due to rotation in the two nearby exterior galaxies M 31 and M 33, that while the observations do not define the precise density-distribution within these thin discoidal systems, they do require that the matter be distributed much more uniformly throughout the volume of the discoids than the light is. The gravitational effects implicit in the observed rotational velocities make it

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probable that the nucleus actually contains little more than its proportionate share of the mass of a "spiral" and that the amount of matter lying between the "arms" of the "spiral" is comparable to that shining as the "arms." In reviewing the state of our knowledge of our own galaxy, Wyse and Mayall find that the usual belief that a great concentration of mass exists beyond the star-clouds of Sagittarius is not a necessary conclusion from the observational facts; the sun must, however, be far out towards the rim of our spiral, as has generally been supposed.

PERIODICAL PUBLICATIONS

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| <i>American Journal of Mathematics</i>
Johns Hopkins Press, Baltimore, Md. | <i>Duke Mathematical Journal</i>
Duke University Press, Durham, N.C. |
| <i>American Mathematical Monthly</i>
33 Peters Hall, Oberlin, Ohio. | <i>Journal of Mathematics and Physics</i>
Massachusetts Institute of Technology, Cambridge, Mass. |
| <i>Annals of Mathematics</i>
Princeton University Press, Princeton, N.J. | <i>Popular Astronomy</i>
Carleton College, Northfield, Minn. |
| <i>Astronomical Journal</i>
Albany, N.Y. | <i>School Science and Mathematics</i>
450 Ahnaip Street, Menasha, Wis. |
| <i>Astrophysical Journal</i>
5750 Ellis Ave., Chicago. | <i>Transactions of the American Mathematical Society</i>
531 West 116th Street, New York City. |
| <i>Bulletin of the American Mathematical Society</i>
531 West 116th Street, New York City. | |

COGNATE SOCIETIES AND RESEARCH INSTITUTIONS

(For further information, the reader may address the following organizations)

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| AMERICAN ASTRONOMICAL SOCIETY,
Ann Arbor, Michigan. | NATIONAL ACADEMY OF SCIENCE, 2101
Constitution Ave., N.W., Washington, D.C. |
| AMERICAN MATHEMATICAL SOCIETY,
531 W. 116th St., New York City. | |
| MATHEMATICAL ASSN. OF AMERICA, 33
Peters Hall, Oberlin, Ohio. | SCIENCE SERVICE, 2101 Constitution
Ave., N.W., Washington, D.C. |

DIVISION XIX

ENGINEERING AND CONSTRUCTION

STRUCTURAL ENGINEERING

By J. J. DOLAND AND H. P. EVANS

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DAMS

General.—The U. S. Bureau of Reclamation, U. S. Army Corps of Engineers, and Tennessee Valley Authority carried on the principal activities in the field of dam construction in 1941.

Other major dams either in progress or completed by other agencies during the year were the Glenville and Nantahala in the Tennessee River Valley by the Aluminum Company of America, Savage River Dam in Maryland by the Works Progress Administration, and Kingsley of the Central Nebraska Power and Irrigation District.

The Bureau of Reclamation continued the construction of Grand Coulee in Washington, Shasta and Friant in California, Green Mountain in Colorado, and Wickup in Oregon. Construction was begun by the Bureau on the Keswick Dam in California and the Boise-Anderson Ranch Dam in Idaho. Marshall Ford in Texas, Deer Creek in Utah, and Vallecito in Colorado were completed during the year.

The Corps of Engineers continued construction operations on several large flood control and multi-purpose dams, the outstanding projects being Clearwater in Missouri, John Martin (formerly Caddoa) in Colorado, Nelson in Texas, Franklin Falls in New Hampshire, Mud Mountain in Washington, and Kanopolis in Kansas. The Corps began the construction of Wolf Creek in Kentucky,

Norfolk in Arkansas, and Santa Fe in California. Dams completed during the year by the Corps were: Blackwater in New Hampshire, Great Salt Plains in Oklahoma, Mahoning in Pennsylvania, Prado and Fullerton in California, and Wappapello in Missouri.

The Tennessee Valley Authority completed two dams, continued the construction of two large dams previously begun and started four additional dams. Cherokee and Watts Bar were completed; construction continued on Kentucky and Fort Loudoun; and Chatuge, Nottely, Apalachia, and Ocoee No. 3 were begun.

Grand Coulee.—Some 60,000 cubic yards of concrete placed in Grand Coulee Dam during the year brought the total in the dam and appurtenant structures to about 10,500,000 cubic yards. This completed the four elevator towers, the bridge of 11 arches over the spillway section, and the remainder of the training walls. The 11 huge drum gates for controlling the spillway were assembled in place and the operating mechanism installed during the summer. In the reservoir area, the Great Northern Railway began operating over its relocated line in July, WPA completed the clearing of the reservoir basin, and work progressed on the relocation of state and county roads.

The first of the 108,000 kilowatt generators in the left powerhouses was placed in operation in September.

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ber, two others are expected to be ready by March, 1942, and contracts have been awarded for three more 108,000 kilowatt units. Due to the urgent requirement for power for defense purposes, funds have been requested for three additional large generating units, thus bringing the total to nine, one-half the ultimate number. The contractor placed the penstocks and foundation for the right powerhouse, and it is now planned to award contracts for the superstructure so that additional units can be installed in 1943. The contract for completion of Grand Coulee and the left powerhouse building should be completed by January, 1942. (See THE AMERICAN YEAR BOOK, 1934-1940.)

CENTRAL VALLEY PROJECT

Program.—Major features of the \$228,000,000 Bureau of Reclamation Central Valley Project in California all made progress during the year. By the end of 1941 contracts totaling nearly \$100,000,000 had been completed or were under way.

Shasta Dam.—Two million cubic yards of concrete were placed during 1941 at Shasta Dam, located on the Sacramento River near Redding, Calif., thus bringing the total concrete already in place to 2,500,000 cubic yards; total required is 6,000,000 cubic yards. Sound bedrock was reached about 100 feet below stream bed, thus officially establishing the maximum height as 602 feet. Early in December the river overtopped the cofferdams and flooded the work in the low-level spillway area for the winter season. Installation of generating machinery in the powerhouse has been started. Two 75,000 kilowatt generators have been completed and are now stored at Boulder Dam. Three additional generators are on order. It is expected that the 30 miles of new main line for the Southern Pacific Railroad and the Pit River Bridge will be completed soon and that train operation will begin about April 1, 1942. (See THE AMERICAN YEAR BOOK, 1938-1940.)

Friant Dam.—The placing of the

2,200,000 cubic yards of concrete in Friant Dam, a concrete gravity structure located on the San Joaquin River about 20 miles north of Fresno, Calif. was practically complete by the end of the year. Ponding began in November, and the river flow was passed through the four permanent outlets. Grouting of contraction joints began late in 1941. The major portion of the future work consists of placing the spillway gates and the control valves on the irrigation canals. (See THE AMERICAN YEAR BOOK, 1939, p. 677; 1940, p. 718.)

Keswick Dam.—Keswick Dam is located nine miles downstream from Shasta Dam. This concrete gravity structure, 125 feet high and 800 feet long, will be used to develop hydroelectric power and to regulate the flow from the Shasta power plant. Contract was awarded in August for the first stage construction of the dam, and by the end of 1941 excavation for the left abutment and the spillway section was complete. Placement of concrete started in November. Work is being rushed to permit delivery of power at the earliest date possible, which is expected to be in the fall of 1943.

Green Mountain Dam.—Green Mountain Dam, an irrigation storage and compensation reservoir now 70 per cent complete, is the farthest along of all units on the huge Colorado-Big Thompson project of the Bureau of Reclamation. (See THE AMERICAN YEAR BOOK, 1937-1940.)

Boise-Anderson Ranch Dam.—Contract was awarded on Aug. 4 for the construction of this earth and rockfill structure with a maximum height of 444 feet. It is located on the South Fork of the Boise River about 20 miles above Mountain Home, Idaho. The storage capacity of 500,000 acre-feet will be used for irrigation, flood control, and an initial power development of 26,000 kilowatts. The dam, power plant, and power plant machinery is estimated to cost about \$14,600,000 and will require four to four and a half years to complete. The contractor began work on Sept. 1.

Davis Dam.—An initial appropriation of \$4,000,000 has been made for the Davis Dam Project of the Bureau of Reclamation. An earth and rock-fill structure, 1,350 feet long and 138 feet high, and power plant are to be constructed on the Colorado River about 67 miles downstream from Boulder Dam. An initial installation of four 45,000 kilowatt units will be made in the power plant with provision for later installation of an additional unit of the same size. This power development will provide additional power for national defense needs in Arizona and Southern California which will soon exceed the output at Boulder and Parker Dams. Construction of the dam and power plant is expected to start early in 1942, and the Bureau plans to be developing power in the spring of 1945.

TENNESSEE VALLEY

Program.—The activities of the Tennessee Valley Authority during 1941 were greatly affected by the national defense emergency chiefly as related to the increased demand for power for the production of aluminum. This increased demand is being met by installing two additional 36,000 kilowatt units at Pickwick Landing Dam, six additional 26,000 kilowatt units at Wilson Dam, and constructing a steam plant near Watts Bar Dam with three 60,000 kilowatt units. Two additional 32,000 kilowatt units were completed at Wheeler Dam during 1941. The Authority has now completed and placed in full operation Norris, Wheeler, Pickwick Landing, Guntersville, Chickamauga, and Hiwassee Dams.

Kentucky Dam.—All of the 369,000 cubic yards of concrete in the lock has been placed and the lock gates installed. Most of the 1,873,000 cubic yards of excavation in the approach channel to the lock has been made. The second cofferdam which encloses the powerhouse and nine bays of the spillway is complete; excavation and foundation exploration are complete and concrete in this stage started June 24. The completion date has

been advanced one full year, and it is expected that closure of the dam will take place by Jan. 1, 1944. The installation of five 32,000 kilowatt units has been authorized. (See THE AMERICAN YEAR BOOK, 1939, p. 680; 1940, p. 720.)

Watts Bar Dam.—Construction of the lock, spillway, and embankments has been completed. Alterations in the design of the service bay were necessitated by requirements of the condensing water conduit from the reservoir to the Watts Bar steam plant. The construction schedule has been advanced to meet national defense requirements; the first power unit should be in operation by February, 1942 and two additional units by April, 1942. (See THE AMERICAN YEAR BOOK, 1940, p. 721.)

Cherokee Dam.—Rapid construction progress during 1941 achieved the practical completion of this concrete and earthfill structure in approximately one and a half years after it had been authorized by Congress. Much of the credit for this speed-up of schedule is given to the unusually fine weather and to the fact that Congress granted authority to the TVA to negotiate contracts. The latter permitted quick procurement of materials and equipment. The outlet conduits were closed on Dec. 5, and the reservoir is now filling. The first of the authorized three 30,000 kilowatt units is scheduled for operation in April, 1942. (See THE AMERICAN YEAR BOOK, 1940, p. 721.)

Fort Loudoun Dam.—Fort Loudoun Dam on the Holston River just upstream from the mouth of the Little Tennessee River was started on July 8, 1940. Concrete placing in the 60 x 360 feet lock, whose 80-foot lift is said to be the world's highest single lift, started Jan. 15, 1941, and is now about 50 per cent complete. Excavation for the first stage of the spillway was practically complete in June, and the earth embankment work is proceeding rapidly. The first two 32,000 kilowatt units are scheduled for operation in November, 1943, and space is being provided for two additional units. The

construction schedule has been advanced one full year to provide more electrical power for the war effort; closure is now scheduled for March, 1943.

Hiwassee Projects.—On July 16, Congress authorized the construction of four dams in the Hiwassee River Basin to boost the power production for national defense. The four dams are Apalachia, Ocoee No. 3, Chatuge, and Nottely. The Apalachia is a 272,700 cubic yard concrete gravity structure; Ocoee No. 3 is a 100,000 cubic yard concrete gravity dam; Chatuge is an earthfill dam containing about 2,200,000 cubic yards; and Nottely is a combination earth and rockfill structure with a total yardage of 1,550,000. A single 24,000 kilowatt unit will be installed at Ocoee No. 3 and two 37,500 kilowatt units at Apalachia. The first power delivery from both projects is scheduled for February, 1943. No power installations are scheduled for immediate installation at Chatuge or Nottely.

Denison Dam.—At the close of the year the entire Denison Dam project on the Red River near Denison, Tex. (see *THE AMERICAN YEAR BOOK*, 1939, p. 676; 1940, p. 718.) was about 29 per cent complete. Construction of the outlet works is now complete, and the main dam embankment and excavation for the spillway has advanced to about 35 per cent complete. The substructures for the bridges of the St. Louis-San Francisco Railway relocation over Washita River and Rock Creek were one-quarter complete at the end of the year. Contracts for furnishing and installing two 56,000 horsepower hydraulic turbines and governors for the powerhouse have been awarded, and bids for furnishing and installing two 36,842 kilowatt alternating-current generators were opened on Dec. 12.

Mud Mountain Dam.—The embankment at Mud Mountain Dam in White River Canyon near Enumclaw, Washington was completed on Dec. 1. Completion of the rockfill embankment with a rolled-earth core, carried to the record height of 425

feet, was speeded by two unprecedented methods: (1) subjecting the material for the rolled-earth core to a drying process which used oil-fired rotary kilns and (2) keeping rain and snow from the work below by suspending an enormous 328 x 196-foot tent from the canyon walls. The 23-foot diversion tunnel and the 9-foot sluiceway tunnel were both completed except for the construction of the valve house and the installation of the outlet valves and penstocks.

Wolf Creek Dam.—Construction was begun in August, 1941 of the Wolf Creek Dam, a combined flood control and hydro-electric power project, located on the Cumberland River in Russell County, Kentucky. The dam will have a maximum height of 240 feet and a total length of 5,736 feet, of which 1,836 feet, comprising the powerhouse, intake structure, spillway, and a non-overflow gravity section, will be of concrete and the remainder of rolled-earth fill. The concrete gravity spillway section located in the present river channel will be provided with 12 sluices and 10 tainter-type spillway crest gates. At maximum pool, the reservoir will cover 56,830 acres and provide a total storage capacity of 5,782,000 acre-feet, of which 1,895,000 will be allocated to flood control and 3,887,000 to power. The initial power installation will develop 125,000 kilowatts with provision being made for a future increase to a total power output of 250,000 kilowatts. The revised estimated cost for the initial development is \$35,000,000 exclusive of power generating equipment. At the end of 1941, 65 per cent of the access road was constructed and 4 per cent of the dam and appurtenant works was complete.

FLOOD CONTROL DAMS

New England.—One of the three dams being built for the control of floods in the Connecticut River Valley, Knightville Dam on the Westfield River in Massachusetts, was completed early in 1941. Construction of the other two, Birch Hill and Surry Mountain, progressed almost to

completion. Birch Hill Dam, located on Millers River in Massachusetts, is a rolled fill structure, 1,400 feet long and 60 feet high, containing 390,000 cubic yards of material. The relocation of 4.5 miles of the Boston & Maine Railroad double-track main line, necessitated by this dam, was completed in July. Diversion of the river was made also at that time, and the structure is now substantially complete.

Pittsburgh Dams.—Mahoning Dam (see *THE AMERICAN YEAR BOOK*, 1939, p. 678), a concrete gravity structure 160 feet high and 993 feet long, was completed in June at a total cost of \$6,500,000 and one year ahead of schedule. Mahoning Dam and the previously-completed Tygart, Tionesta, and Crooked Creek Dams are located on the tributaries of the upper Ohio River to provide flood protection for industries in the Pittsburgh district. Construction operations continued on two additional large dams for this flood control project, namely, Loyalhanna and Youghiogheny Dams.

Southern California Dams.—The completion of Prado and Fullerton Dams in Orange County, the near completion of Sepulveda and Brea Dams, and the ground breaking for Santa Fe Dam constituted major progress on this flood control program. Under the supervision of the U. S. Engineer Department, the \$9,500,000 Prado Dam and the \$425,000 Fullerton Dam were both completed early in the year. Santa Fe Dam, a rolled earthfill dam located on the San Gabriel River about 29 miles above that river's mouth, is 92 feet high and 24,100 feet long. An uncontrolled spillway with a crest length of 12,000 feet will be located near the right abutment, and the outlet works will be constructed through the dam. The 33,000 acre-foot reservoir provided by this 10,000,000 cubic yard dam will reduce the flood flow of the 231 square-mile watershed from 81,600 to 19,000 cubic feet per second. The dam was about 10 per cent complete at the end of the year.

Susquehanna River.—The U. S.

Engineer Department continued work on the project started in 1937 to provide the highly-industrialized section near Binghamton, N. Y. with protection from the floods of the upper Susquehanna River. The Whitney Point and Indian Rock Dams were practically completed by the end of the year. Whitney Point Dam, the principal structure of the project, is located on Otselic River near Whitney Point, N. Y. It is a rolled-fill earth type structure protected by a curved channel spillway located in the left abutment. The 2,600,000 cubic-yard embankment has a maximum height of 90 feet and is 900 feet long, plus 3,200 feet of dikes. The outlet is a horse-shoe conduit, 13 feet in diameter, tunneled for 1,425 feet beneath the spillway. Indian Rock Dam, an earth and rock-fill type of structure, is located on Codorus Creek three miles above York, Penn.

White and Arkansas Basins.—Continued progress was made by the U. S. Engineer Department on the several projects which are to control the floods of the White and Arkansas Rivers and their tributaries. The Great Salt Plains and the Fort Supply Dams (see *THE AMERICAN YEAR BOOK*, 1939, p. 678) were practically complete at the end of the year, while Nimrod Dam was completed in November. The pouring of concrete for the large Norfolk Dam started on Oct. 10. Rapid progress was made on the construction of the John Martin Dam. Norfolk Dam is located on the North Fork River near Norfolk in Baxter County, Ark. It is a concrete gravity dam 2,624 feet long with a maximum height of 220 feet, and is protected by an overflow spillway 568 feet long located in the existing river channel. The 1,983,000 acre feet of storage will be used for flood control, stream flow regulation, and power generation. Two generating units of 30,000 kilowatts each are to be installed initially. Major construction items are 850,000 cubic yards of excavation, 102,000 lineal feet of core drilling, 1,500,000 cubic yards of concrete, 1,800 tons of reinforcing

steel, and 2,700 tons of miscellaneous metal. The revised estimated cost of the project is \$24,400,000 for construction and \$3,100,000 for lands and damages. Bids were opened Feb. 20, and at the end of the year the project was 20 per cent complete.

BRIDGES

General.—Bridge building in 1941 was not quite as spectacular as in several previous years but considerable improvement was made in the appearance and technical details of bridges with spans less than 200 feet. The dollar volume of bridge building was slightly below the average of the past 15 years but was practically equal to that of 1940. Only two major bridge accidents occurred. At Hartford, Conn. the almost-completed steel work of a 270-foot girder span over the Connecticut River collapsed during erection and killed 16 men. At Sault Ste. Marie, Mich. a 27-year-old double-leaf railway bascule span collapsed under locomotive load when failure of the interlocking system showed a clear signal before the leaves were properly closed and locked.

Connecticut River Bridge.—This bridge over the Connecticut River at Hartford, is notable for the fact that the main river crossing is made up of a 270-300-270 foot continuous girder unit. On Dec. 4, after steel erection had progressed to the river span at the west end, what is believed to have been a failure of the falsework supporting the completed section of the first 270-foot girder span resulted in the collapse of that steelwork. Completion of the bridge will be delayed from two to four months.

Dubuque Bridge.—A novel structural design was adopted for the highway bridge now under construction across the Mississippi River from Dubuque, Ia. to East Dubuque, Ill. The main part of the river is spanned by a 1,539-foot continuous tied-arch of unique design which has a center span of 845 feet and two 347-foot side spans. The remainder of the structure is of deck girder and deck

beam spans of lengths varying from 44 to 181 feet. The project has a total length between abutments of 5,760 feet, provides a 24-foot roadway and a 5-foot sidewalk, and is expected to cost about \$3,600,000.

Kentucky River Bridge.—The Kentucky State Highway Department has under construction a three-span, continuous, deck-truss structure over the Kentucky River at Cleveland, Ky. The continuous truss is a 3-span unit of 320-448-320 feet. A 192-foot truss and two 50-foot reinforced concrete spans are attached at each end of the continuous truss, making the over-all length with approaches almost 1,700 feet. The \$900,000 crossing will provide a 26-foot reinforced concrete roadway flanked by 3-foot sidewalks 250 feet above the normal pool level of the river. The tallest of the piers has a height of 205 feet, and piers are now being constructed. The contract for the steel superstructure has been awarded.

Peoria, Ill. Bridge.—Piers for the \$2,000,000 highway crossing over the Illinois River at Peoria were practically complete at the end of the year. The 4,745-foot bridge includes a 3-span continuous through truss over the main channel while the remainder is made up of 3-span continuous deck trusses and continuous steel deck-girder and I-beam units.

Piscataqua River Bridge, Portsmouth, N. H.—This double deck structure has a total length on the upper or highway deck of 2,798 feet; the lower deck carries 1,066 feet of single-track railroad. The main river crossing consists of a 224-foot vertical lift span flanked on each end by two 225-foot trusses; towers for the lift span are 207½ feet high. An unusual construction feature, necessitated by swift tides and deep water, was the setting of hollow-leg braced bents on the bottom and then driving H-piles through these legs to rock. The total cost of the project was \$2,477,369.

Pit River Bridge.—The two cantilever arms of the Pit River Bridge in northern California, a doubledeck railway and highway structure resting

on the world's tallest piers, were joined in November, and the bridge is now scheduled for completion in March, 1942. Use of a canvas tent in placing paving on the upper or 4-lane highway deck during the winter will expedite the paving schedule by three months. Long steel girders were being placed in the highway approach to the north end of the bridge as the year ended. The bridge, located about 14 miles north of Redding, Calif., carries the Southern Pacific Railroad and U. S. Highway 99 across the Shasta Dam reservoir.

Rainbow Bridge, Niagara River.—Built to replace the 40-year-old "Honeymoon" span which was destroyed by an ice jam in 1938, this new highway bridge was opened to traffic on Nov. 1. The erection of this 950-foot hingeless arch span, the longest of its type in the world, was one of the most spectacular bridge-building achievements of the year. Since falsework was impossible, the plate-girder arch ribs were supported during erection by an elaborate cable system with a rocker bent placed on each abutment serving as a common point for attaching forward and backstay cables. The new structure cost approximately \$3,600,000. (See *THE AMERICAN YEAR BOOK*, 1940, p. 723.)

State Street Bridge, Chicago.—The city of Chicago is constructing a double-leaf bascule span 245 c.c. of trunnions over the Chicago River to replace an old structure demolished three years ago to permit construction of a subway tunnel under the river. The deck will carry two 41-foot roadways, separated by a 5-foot center curb, and two 11-foot sidewalks. The two piers, straddling the subway tubes, are about finished but construction of the superstructure has been delayed by priority difficulties. Contracts for the approach and the viaduct across the railroad yards at the north end have not been awarded.

Tacoma Narrows Bridge.—The aftermath of the November, 1940 failure of the suspension bridge at Tacoma Narrows, Wash. (see *THE AMERICAN YEAR BOOK*, 1940, p. 721) is briefly that suspenders and ap-

proach spans were removed early in 1941, but the cables and towers are still in place pending further developments. Three boards of engineers, representing the Federal Works Administration, Washington Toll Bridge Authority, and insurance companies, have studied the failure. Attention is now centered on determining methods of financing reconstruction and the acceptable type of structure.

Thames River Bridge, Conn.—The Connecticut State Highway Department is constructing a high-level toll bridge over the Thames River estuary at New London. The bridge's total length of 5,890 feet is made up of deck girders and trusses on the approach spans and a cantilever truss with a 540-foot main span and 352½-foot anchor arms. Construction of the approach span piers is complete and construction of the main river piers is well advanced.

Bridge Awards.—In May, the American Institute of Steel Construction announced the results of its 13th annual competition for the most beautiful steel bridges erected in 1940. The Susquehanna River Bridge between Havre de Grace and Perryville, Md. was rated as the most beautiful of the bridges costing more than \$1,000,000. Dunning Creek Bridge on the Pennsylvania Turnpike, Klamath River Bridge in Humboldt County, California, and the Oceanic Bridge over the Navesink River in New Jersey were rated as most beautiful in their particular price range.

BUILDINGS

General.—Building construction in 1941 reached a new peak of approximately \$4,000,000,000 in volume and established new records for speed. Building activity was distributed approximately as follows: 50 per cent for industrial buildings, 15 per cent for housing including military facilities, 20 per cent for military buildings other than housing, and 15 per cent for commercial and public buildings. The construction of military barracks adhered to a well-established pattern both as to camp layout and

XIX. ENGINEERING AND CONSTRUCTION

the use of wood framing. Industrial buildings were notable for the vast increase in the size of individual structures, some plants having as much as 25 acres under one roof.

Chrysler Tank Arsenal, Detroit.—This one-story butterfly monitor-roof structure, 1,380 x 500 feet, was completed in April, only seven months after design started. Nearly 95 per cent of the wall surface is glass in steel sash. The main building is supplemented by a four-story 50 x 260-foot administration building, a one-story 50 x 160-foot steel-frame personnel building, a boiler house, and a figure 8 test track.

Wright Engine Plant, Cincinnati.—The largest one-story building in the nation, this 1,320 x 1,064-foot machine shop and assembly plant provides nearly 35 acres under one

roof. Floors are concrete, walls of 8-inch hollow tile include a 7-foot line of steel window sash, and roofs are butterfly-type monitors covered with cement tile, cork, tar, and gravel.

Ford Engine Plant, Dearborn, Mich.—Ford Motor Co. constructed a 360 x 1,400-foot completely air-conditioned two-story building for the manufacture of airplane engines. Frame is of steel, walls of brick, and floors are woodblock on concrete. Numerous design specialties were used including enameled steel window sills and louvred awnings, continuous beam framing, and crane rail supports on the bottom flanges of girders. For winter construction the entire building was enclosed in a weatherproof shell of 250,000 square-feet of fibre board. Total cost of the

LARGE AIRPLANE, AIRPLANE ENGINE, AND PROPELLER PLANTS

Company	Location	Cost
Liberty	Farmingdale, N. Y.	\$ 1,088,000
Curtis-Wright	Columbus, Ohio	1,092,000
Wright Aeronautical	Paterson, N. J.	1,500,000
Studebaker Corp.	South Bend, Ind.	20,000,000
Studebaker Corp.	Chicago, Ill.	12,000,000
Curtis-Wright	Columbus, Ohio	10,000,000
Brewster Aeronautical	Hatboro, Pa.	5,000,000
Ford Motor	Dearborn, Mich.	21,000,000
Curtis-Wright	Beaver, Pa.	5,221,000
Thompson Aircraft	Cleveland, Ohio	3,000,000
Consolidated & Douglas	Tulsa, Okla.	10,476,000
Consolidated	Fort Worth, Texas	10,000,000
North American	Kansas City, Kans.	10,000,000
Otis Elevator	Harrison, N. J.	6,955,000
Glen L. Martin	Fort Crook, Neb.	
Studebaker Corp.	Fort Wayne, Ind.	5,000,000
Pratt & Whitney	East Hartford, Conn.	13,125,000

POWDER, MUNITIONS, AND ARMAMENT PLANTS

Owner or Contractor	Location	Cost
War Department	Ogden, Utah	\$ 2,500,000
War Department	Indianapolis, Ind.	6,000,000
War Department	Fort Wingate, N. M.	9,000,000
Dupont	Charlestown, Ind.	75,000,000
Proctor & Gamble	Milan, Tenn.	14,000,000
Trojan Powder	Sandusky, Ohio	10,725,000
Fruin-Colnon	St. Louis, Mo.	11,819,400
Remington Arms	Denver, Col.	10,000,000
Dupont	Childersburg, Ala.	35,000,000
Hudson Motor	Detroit, Mich.	16,000,000
Atlas Powder	Ravenna, Ohio	2,000,000
Bridgeport Brass	Indianapolis, Ind.	11,500,000
American Brass	Kenosha, Wis.	4,760,000
Buick Motor	Melrose Park, Ill.	31,000,000

job, including equipment, is \$30,000,-000.

Bomber Plants, Tulsa and Fort Worth.—Identical in design, these two 320 x 4,000-foot windowless buildings have walls and roof of steel panels filled with rockwool for insulation and acoustical control and have fibre glass mats on the inside for light reflection. Special equipment includes air conditioning, fluorescent lighting, and sprinklers. The Tulsa, Okla. plant will be operated by Douglas Aircraft and the Fort Worth, Tex. plant by Consolidated Aircraft. Other large airplane, airplane engine, and propeller plants are:

Navy Hangars, San Diego, Cal.—Two thin-shell barrel-type reinforced-concrete arches are under construction at the Naval Operating Base at San Diego. The main arch ribs of 294-foot span and 81-foot rise are designed as two-hinged arches with the vertical arch reaction being taken on piles while the horizontal thrust is resisted by tension ties composed of 1 9/16-inch diameter bridge strands. Hinges are of the Mesnager type.

Municipal Building, New York.—Covering two full city blocks and considered the largest municipal building known, New York's \$19,300,-000 Criminal Court and City Prison was dedicated on June 30. An idea of the size of the structure can be gained by noting that it contains 200,000 square-feet of terrazo floors, 150,000 square-feet of tile floors and walls, 154,000 square-feet of interior marble, 110,000 square-feet of glass block, and 17,500 tons of structural steel.

Army Headquarters Building, Washington, D. C.—Foundation work is underway on a \$31,000,000 three-story building of pentagonal shape, located on a 320-acre tract of land in Arlington County, Va., to house the rapidly-expanding organization of the War Department. Two regular pentagonal "rings" of buildings, separated by a 40-foot open area, will be erected around a six-acre inner court. Framing is to be of

reinforced concrete, and the foundation will be on concrete piles.

State Office Building, Frankfort, Ky.—The new 12-story Kentucky State Office Building, 116 x 249 feet in plan, was completed in June at a cost of \$1,250,000 and provides 160,-000 square-feet of floor space. Most unusual feature of the structure is its all-welded steel frame which required 1,470 tons of structural steel. Exterior and interior walls are of brick. The design provides for the future addition of an auditorium seating 1,500 persons as well as future air-conditioning.

TUNNELS

Brooklyn-Battery Tunnel, N. Y.—Work progressed on the twin 31-foot tubes under the Buttermilk Channel of the East River from construction shafts at Hamilton Avenue and Summit Street in Brooklyn to Governor's Island. This tunnel, with an annual capacity of 16,000,000 vehicles, is scheduled to be opened in 1944. (See THE AMERICAN YEAR BOOK, 1940, p. 725.)

Colorado-Big Thompson Tunnel.—Contract was let for a new 7,000-foot length to be driven from the now practically-completed 8,000-foot section at the outlet end. The 13.1-mile concrete-lined tunnel is being driven under the Continental Divide between Grand Lake and Estes Park in Colorado (See THE AMERICAN YEAR BOOK, 1940, p. 725.)

Carlton Tunnel, Col.—Setting an all-time record for driving speed, this 10 x 11-foot six-mile tunnel was officially completed on July 25 only two years after the start of the \$1,000,000 project. The tunnel was driven to unwater the mines of the Cripple Creek gold mining district.

Vehicular Tunnel, Mobile, Ala.—A 3,400-foot tunnel under the Mobile River, cutting 7½ miles from the highway distance to Mobile from the east, was opened to traffic on Feb. 20, 1941. The tunnel is made up of circular sections which were built on dry land and then sunk in a trench dredged across the river bottom. Estimated cost was \$4,000,000.

MECHANICAL ENGINEERING

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DEFENSE EXPANSE
IN ENGINEERING

Although there have been advances in mechanical engineering during 1941, the important events have been the expansions in all of the activities of this branch of engineering, brought about by national defense and preparedness. This has resulted in the enormous increase of plant, of equipment, and of workmen to meet the demand for greater production. In the airplane plants alone there has been a growth of 375% from 8,000,000 to 30,000,000 square feet of floor space, while in the airplane engine building plants this increase has been 500% and in propeller plants 666%. The employees have increased 500%. The demand for new buildings, new tools, and new men is also found in plants for explosives, shells, guns, tanks, mounts, trucks, clothing, foodstuffs and even luxuries.

EDUCATION AND TRAINING

Early in 1940 it became evident that hosts of men would be required for the production of materials and machines—skilled and unskilled workmen, foremen, draughtsmen, engineers and inspectors. Following the proposal of the United States Commissioner of Education on May 29, 1940, \$15,000,000 was appropriated on June 27 for summer and fall training of less than college grade for men, and by July 27 there were 75,000 persons under training in 41 states. This increased to 107,757 in the first two months. The training was mostly carried out in the vocational high schools. The appropriation was increased by \$26,000,000 on Oct. 9, 1940, for allotments to the State Boards for Vocational Training to be used during the school year 1940-41 for training in skills of special value to national defense. It cared for 500,000 trainees without interference with the regular programs of the

schools. Congress also appropriated \$8,000,000 for purchase, rental, or other methods of acquisition of equipment for the vocational schools and \$10,000,000 to equalize the opportunities of youths especially from the rural districts.

On Oct. 9, 1940, \$9,000,000 was appropriated for the cost of short engineering courses of college grade provided by engineering schools or universities having engineering schools in accordance with plans submitted by them and approved by the Commissioner. These plans were for courses designed to meet the shortage of engineers with specialized training in fields essential to the national defense. Immediately there was set up in the Office of the United States Commissioner of Education an organization to handle this program, advisers for 22 regions were appointed, and representatives of the engineering schools in each region were organized into regional committees under the chairmanship of the regional adviser. Needs of industry were studied and engineering courses were planned to meet these needs. By Dec. 3, 1940, 356 proposed courses were submitted from 72 engineering schools providing for 26,000 students. By March, 1941, there were 1,093 approved proposals for Engineering Defense Training Courses from 133 schools for an enrollment of 77,562 students.

These courses are of two types. One an intensive full time pre-employment course at the schools to fit the trainees for work in the defense industries or in agencies of the Government. This type cares for one-tenth of the trainees. The other type is a part time in service course for persons already employed. The latter courses, in which from 100 to 125 hours of class work or of laboratory practice were given at some institutions, covered such

subjects as principles of metallurgy, welding, elementary machine design, tool design, manufacturing and production, map reading and aerial photography, drafting, electrical engineering, electronics, inspection technique, statistical methods, and mechanics of materials.

Industry itself conducted schools such as that for draughtsmen by the General Electric Company or that for tool designers by the Wright Aeronautical Company. Such schools as the Williamsport School for Adult Training are preparing machinists for the airplane industry. In all industries new men must be trained for the special method used in a given plant.

MANUFACTURING EXPANSION

The national defense activities for the year demanded greatly increased production of war material, and many companies increased the size of their plants or erected plants in new localities. Others have used parts of their plants for the making of parts for others or for complete new devices. From the automotive industries the following are noted: General Motors, engine propellers, fuselage sections, and parts; Chrysler, fuselages and tanks; Ford, bombers and engines; Packard, engines; Studebaker, engines; Goodyear Air Craft, wheels and brakes, stabilizers, wings, tail surfaces, control surfaces, outer wings; Hudson, fuselages, rocker arms, pistons; Graham Page, connecting rods, articulated rods; Briggs Manufacturing Co., ducts, bomb doors, fuel tank covers, wing flaps; Murray Corp., fuselage sections; Nash-Kelvinator Corp., propellers.

The above list indicates the way industries are turning to new products as well as the practice of manufacturers to sublet the production of some of the parts of its final product. The Sperry Gyroscope Co. started to use sub-contractors in 1937, so that by April, 1939, they were receiving 25,000 hours of work per month from 21 individual sub-contractors and by December, 1940, they received 200,000 hours per month. In June, 1941, they had 50 sub-contractors. To make

these sub-contracts effective careful inspection must be maintained after the sub-contractor is trained, and in some cases he is supplied with carefully selected material by the Sperry company.

The Carrier Corporation uses sub-contractors for part of its work for the Navy, and the General Electric Company has extended its use of sub-contracts. Another illustration is the Boeing bomber, *Flying Fortress*, for which 248 different factories have contributed parts.

Much of the success of the present expansion has been due in part to the planning for industrial preparedness by industry and the War Department begun in the twenties. Unfortunately, the educational orders by the Government as provided in the plan were not carried out fully, although some of the industries place educational orders with possible sub-contractors.

MANUFACTURING METHODS

The Lockheed Aircraft Corporation has developed a method of making airplane templates which saves at least \$20,000 per model as well as speeding production. Photographs are taken from the lines and surface shapes on the floor of the mold loft, and the negative is reduced for model construction or enlarged by 1/20 to 1/8 inch per foot beyond full size to care for shrinkage of the part in treatment or casting.

Drawings or prints may be enlarged by the camera to the full size or reduced for filing. After the curves or shapes are made to proper size they are reproduced electrolytically by first making a photographic reproduction on a metal sheet which has been coated with a non-conductor, after which the lines are scribed, cutting through the coating. If now a terne plate with a transfer solution is brought in contact with the scribed plate the flow of electric current through the scribed line will mark the plate so that it may be cut to an exact shape.

Rubber pads on the platen of hydraulic presses are used to cut metal

0.015 to 0.09 inches thick when forced down on dies $\frac{3}{8}$ inch thick without the use of male dies for this purpose. In some cases the dies are made of ply wood with a sheet steel plate 0.16 inch thick for the cutting edge with a rake of six degrees.

ACCELERATED PRODUCTION

A complete powered conveyer system of 6,280 feet at the Vultee plant in California for production line methods has speeded up production, reducing the final assembly time by 50% and reducing the necessary floor space by 33%. The Wright Aeronautical Company has also applied line production to increase output.

MACHINE TOOLS

Many special service tools were constructed during the year. The National Machine Tool Builders Association, through the Defense Committee, proposes that shells be made by companies building printing presses and textile machinery. For such, they have designed inexpensive special machines which may be produced quickly and will produce their products economically with automatic attachments so that unskilled workmen may be employed. These will be arranged to operate at one or two speeds, with motor of 10 to 60 hp.

MATERIALS

The Allegheny-Ludlum Steel Corporation has lifted its royalty restriction which will permit others to manufacture the needed low tungsten high speed steel.

Aluminum production is being increased from 800,000,000 pounds to 1,400,000,000 pounds by the spring of 1942, and 200,000,000 pounds will be imported from Canada. Eight new plants are being constructed to be operated by the Aluminum Company of America, by Reynolds, and by the Bohn Aluminum Co.

Magnesium production is being increased from 30,000,000 pounds to 75,000,000 pounds, and the Office of Production Management proposes 400,000,000 pounds in 1942. Seven companies are active in this expansion.

The Dow Chemical Co. is planning this year to produce 30,000,000 pounds at a new plant using sea water and a company in the West is planning to produce 25,000,000 pounds from ores.

Steel production is to be stepped up 10,000,000 tons.

PLASTIC BONDED MATERIALS

Phenolic asbestos compounds are used for chemical equipment. Phenolic resin is used with an asbestos filler which is digested in acid to remove soluble elements. Three grades are made for use with different chemicals. It is made into any shape, as tanks, pipes, valves, fillings, ducts, and housings. The tensile strength is 2500 psi, and it can be made of varying thicknesses from $\frac{1}{4}$ inch to $2\frac{1}{2}$ inches.

Cloth and paper with plastic resins are used for cams, street light reflectors, bomb release quadrants, airplane radio mast, roll necks on steel and brass rolls, as well as for pipes and fittings, and vinyl resin with ply wood is used on planes.

INSULATING MATERIAL

Silica alrogel is made by heating the solid resulting from the acid treatment of sodium silicate. It is a better insulator than still air from 250 F. and can be used up to 1400 F. It weighs 7.0 to 8.25 lb per cu. ft. when packed.

RADIANT HEATING

The use of radiant heating by concealed pipes or panels in walls, ceiling, and floors is continuing. One room in the new building for the North Western Technical Institute has three floor coils, two ceiling coils, and two wall panels in one wall and one panel in each of two walls for normal use and experimentation.

CANTONMENT HEATING

The heating of cantonments has been standardized. The country has been divided into three zones: zone X where the low temperatures vary from -20 F. to zero; zone Y from 0 F. to 20 F.; Z zone above 20 F. Stoves, warm, air furnaces, steam boilers or

central plants are used for various buildings.

HEATING BY REVERSED REFRIGERATING MACHINE

The use of a system proposed by Lord Kelvin almost 80 years ago as a possibility is now used in the Administrative and Service Building of the United Illumination Co. at New Haven, Conn. and in the Westinghouse Building in Emeryville, Calif. The method is to use a refrigerating machine cycle so that in summer the air or water for the cooling is passed over expansion coils and is cooled by the evaporation of the refrigerant, while in the heating season, air or water is passed over the condenser of the system to be warmed by the liquefaction of the refrigerant while the evaporator is in contact with the outside air or better, some warmer water supply from which it may abstract heat for evaporation. This means that it may be possible to deliver to the building four or five times the amount of energy used by the compressor. In California two 7½-ton compressors are used, while at New Haven eight 40-ton water chilling units are used.

AIR CONDITIONING

Air conditioning is being installed in so many buildings that the water requirements on city supplies and on sewers are becoming a serious problem. In New York City for instance, only a limited amount of water may be used and that only on special permit.

The air conditioning load on the system of the Consolidated Edison Co. of New York increased 4019 hp from 158 units during the first four months of 1941. At the beginning of the year there were 63,468 units throughout the United States, requiring 1,083,121 hp.

NATURAL GAS STORAGE BY LIQUEFACTION

The natural gas line for the district around Cleveland, O. became too small for the peak load and the East Ohio Gas Co. decided to store gas in

a liquified form at a cost for equipment of \$750,000 in place of installing a new 12-inch pipe line at a cost of \$3,000,000. The gas is liquified by being cooled to -125 F. at 600 psi at which point it liquifies. When this is expanded by throttling to 15 psi the temperature of the liquid remaining reaches -267 F. Under these conditions it is stored in one of three spheres each 57 feet in diameter and holding 600,000 gallons. The sphere is surrounded with three feet of cork insulation which is cased in a steel sphere 63 feet in diameter. As the gas occupies 600 times the volume of the liquid the capacity of this is equivalent to 150,000,000 cubic feet of gas. Gas is compressed to 600 psi, dried and freed of carbon dioxide. After this it is cooled and liquified by the evaporation of liquid ethylene at -125 F. The liquid is cooled to -139 F. in heat interchangers by the gas escaping from the expansion tanks. The two expansions to a point just above atmospheric pressure reduces the temperature to -267 F. and the gas produced by these throttlings is used in heat interchangers before it is recompressed. The rate of liquefaction of 4,000,000 cubic feet per day permits the filling during off-peak periods.

STEAM POWER PLANTS

The trends to higher steam pressures during the year have been for the purpose of increasing efficiency, for "topping" or for eliminating reheating between stages with the available higher temperature. This temperature is fixed at present by the properties of the alloy steels developed so far. Although 1000 F. was used by the Detroit Edison Co. some years ago, 900 to 960 F. is reported for many stations this year. The Twin Branch Station of the Indiana and Michigan Electric Co. near South Bend is operating with steam at 2500 psi and 940 F., with reheat at 900 F. and 330 psi for the lower stage of the cross compound turbine. The station performance for the initial period of operation has been 10,282 Btu per kw-hr. Christie points out that, if alloys were available for an initial

temperature of 1200 F., reheat would be unnecessary.

The high pressure of 2000 psi and 960 F. are used for a 25,000 kw "topping" turbine-alternator at Somerset, Mass. for the Montaup Electric Co. and a pressure of 1525 psi with 950 F. at the Avon, Martinez, and Oleum plants in California. The Public Service Electric and Gas Co. of New Jersey is using 1250 psi with 950 F. at Burlington, and the Ford Motor Company uses 1250 psi with 915 F. at River Rouge.

The practice of adding high pressure boilers and turbines, which exhaust steam into the original piping of an existing station for the operation of its equipment, is known as "topping," and during the year a number of central stations and industrial power plants have been "topped." The effect of this is to make the station more efficient; for instance, the station performance of the Montaup plant has been changed from 14,520 Btu per kw hr to 10,500 Btu per kw hr an improvement of 28%.

BOILERS

The boilers for these and other plants of the year have been specially designed to suit local conditions. The combustion spaces have been large for proper heat release surrounded by water walls or radiant superheater walls for the greater use of effective radiant heat transfer to increase the capacity per square foot of boiler surface. In some boilers primary and secondary furnaces are installed. The maintenance of constant superheat is important so that convection superheaters are placed in series with radiant superheaters to give a more uniform discharge at various loads, or twin furnaces with different amounts of superheat in the two gas passage systems are employed at times as well as separately fired sections of the superheater. A method recently employed for control of temperature has been the condensation of some of the saturated steam entering the superheater by a heat interchanger using boiler feed as the coolant so

that the final temperature of superheat remains nearly constant.

Most of these new stations are fired with pulverized coal, and electrostatic precipitators are used to remove 95% of the fly ash from the flue gas of such fuel. Where the fuel is oil, natural gas, or refinery wastes, such as acid sludge, pitch, and petroleum coke (used at the Avon, Martinez, and Oleum plants) the precipitators are omitted.

The natural circulation of water through these boilers is used in most of them although that of the Combustion Engineering Corporation for Montaup has forced circulation, the first used by a public utility in the United States. This is the La Mont type of boiler which evaporates 650,000 pounds of water per hour. In natural circulation, fluid velocities of water or water steam mixtures of 15 to 23 fps must occur. A test at Burlington indicated that the down comers in its natural circulation boiler were moving water at 14 times the rate of evaporation.

WATER CONTROL

Feed water control is exceedingly important for these boilers and economizers. For the protection of superheater tubes the steam discharge must be cleaned and dewatered as much as possible. The latter need is met by cyclone separators, eliminators, and bubble washers on tubes entering the steam drums and by eliminators on the outlets from the drums. Deaeration, the control of pH, the ratio of sulphates to alkalies and scale forming salts have been required for the feed water for many years but with the high pressures above 600 psi and with a high heat input the presence of silica has been troublesome. The deposit of silicate scales under these conditions causes tube failures, and to prevent such the limit of 0.1 ppm of silica in the feed is maintained and blow down is used to hold silica not in excess of 12 ppm in the water of the boiler. Betz, Noll, and Maguire have proposed an efficient removal of silica from solutions

by an adsorption process using magnesium oxide.

EMBRITTLMENT AND CORROSION

During the year three of the staff of the Bureau of Mines developed a method of determining conditions within a boiler which may lead to caustic embrittlement. The method consists in allowing a small discharge of hot boiler water behind a sample of stressed steel. If the solids remaining after the evaporation of the water do not produce embrittlement of the steel sample the conditions within the boiler are satisfactory as far as this element of danger is concerned.

To determine corrosion in boilers the Cochrane Co. has developed apparatus by which hydrogen, oxygen, nitrogen, and ammonia are continuously separated from a stream of boiler steam to detect the hydrogen set free if there is any corrosion of the steel.

RAW WATER TREATMENT

The feed water used in the eight-1400 psi boilers for the topping units at the Waterside Station of the Consolidated Edison Co. of New York, each evaporating 500,000 pounds of steam per hr, contains 30% of raw makeup. The water used comes from the Croton water-shed and contains calcium, magnesium, and sodium carbonates, some sodium chloride and sulphate, and 6 ppm of silica. Solids total 65 ppm. The pretreatment of this water which will amount to 1,200,000 pounds per hour is carried out by the Permutit Zeo-Karb process with degasification of carbon dioxide, the feeding of sodium hydroxide and disodium phosphate and deaeration as well as a continuous blow down to maintain the limit of total solids of 450 ppm. The water after treatment is without hardness, and the largest dissolved salt is sodium sulphate (18 ppm). There are 7 ppm of sodium chloride.

STEAM MAINS

The steam mains for these high pressures and high temperatures are

thick, and the loads set up by expansion require complete mathematical analyses to determine the methods of support. Not only are calculations made regarding expansion, reacting forces, and moments, but the results of these are checked by the use of small-scale metal models bent into the form to be taken by the pipe on which, after heating, measurements of forces and moments are made and interpreted in terms of those for the full size system.

ALTERATION OF OLD TURBINES

During the year one 30,000-kw Westinghouse steam turbine casing at Brooklyn was altered to give 40,000 kw with the same throttle conditions but with poorer vacuum on account of the greater load on the condenser, while two 20,000-kw turbines at the Sherman Creek Station of the Consolidated Edison Company were altered for the same throttle conditions to yield 30,000 kw each. These latter changes were made to fit in with the added topping units of 1600 psi while the former may be used with topping. The altered Westinghouse units at Sherman Creek will operate more efficiently at 11.7 pounds of steam per kw-hr in place of 12.77 required by the old units.

REMOVAL OF SO₂

Bulletin 324 of the Engineering Experiment Station of the University of Illinois, discusses methods and costs of removal of SO₂ from boiler flue gases. The results indicate that the cost of a plant to treat 100,000 cfm of hot gas at 300 F. would be \$140,000.00. This is \$45 per ton of coal with 4% sulphur per day, or \$9.40 per kw capacity of station. This would mean also an operating cost of \$1.08 per ton of coal containing 4% sulphur exclusive of fixed charges.

NEW CAPACITY

During the year ended July, 1941, there were installed or under construction 1,220,750 kw of central station capacity with pressure of 1000 psi or higher and 1,295,000 kw of

capacity operating between 850 and 999 psi. The lower pressure units totalled only 513,000 kw. The total for 1941 alone is 2,054,640 kw. For 1942 the equipment on order totals 1,933,750 kw and plans for the next four years call for about 2,250,000 kw per year.

Industrial plants have added for the year ended July, 1941, 274,200 kw and municipal plants, 98,600 kw.

According to the preliminary census report American industry has 11,297,000 hp of steam turbines and 6,563,000 hp of steam engines. With these and 3,400,000 hp of other prime movers, industry used 13,944,000 hp for driving electric generators and the remainder, 7,323,000 hp, for mechanical power.

The motor equipment of industry totals 30,000,000 hp using purchased power and 16,000,000 hp using power generated by the plants. The consumption of industry is approximately 100,000,000,000 kwhrs per year.

COOPERATIVE STEAM POWER DEVELOPMENT

The Avon station near the Tide Water Associated Oil Co. plant, the Martinez station near the plant of the Shell Oil Co., and the Oleum station near the plant of the Union Oil Co. have been built and are to be operated by the Pacific Gas and Electric Co. which will supply steam and electricity to the oil companies, receiving as part payment refinery waste for fuel. Excess energy above refinery needs will be available for defense work in this district on San Francisco Bay. The total requirements for the three refineries will be a peak of 20,000 kw with 120,000,000 kwhr per year at 2300 volts with 3 phase current and 875,000 pounds of steam per hour peak and 4,000,000,000 pounds of steam per year at 160 psi and 50 F superheat.

Avon and Martinez have each 3-B and W boilers of 200,000 pounds of steam per hour at 1525 psi and 950 F., while Oleum will have six slightly larger boilers. Natural gas, oil, acid sludge, pitch, or petroleum coke are used for fuel. The turbines in each

plant are 40,000 kw tandem compound units made up of a 20,000 kw non-condensing or high-pressure unit electrically coupled to the condensing unit of the same size. The first turbine will deliver 675,000 pounds per hour at 225 psi back pressure.

The condensers are designed to handle 280,000,000 Btu per hour at 1.89 inches absolute pressure with 37,500 gpm of water at 70 F. when no process steam is needed. At Avon and Martinez this water will be supplied by cooling towers, while bay water will be used at Oleum.

The process steam will not be supplied from steam of the turbine circuit but will be supplied from an evaporator using exhaust steam at 225 psi from the first turbine to produce steam at 160 psi and 50 F. superheat.

INTERNAL COMBUSTION ENGINES

The great increase in the construction of internal combustion engines for transportation by rail, road, air, or water is discussed in other sections of this division of THE AMERICAN YEAR BOOK. The use of these engines is increasing for central stations and industrial plants. During the year ended April 1, 1941, 380 Diesel engines were installed or purchased varying from 6 hp to 3850 hp as well as 388 other internal combustion engines varying from 25 hp to 2400 hp. Many of these Diesel engines have been improved as to capacity by super-chargers which are operated by the exhaust gases on the Büchi system using turbines driven by exhaust gases. A Diesel engine with opposed pistons has been developed by Sulzer Brothers of Switzerland.

COUPLINGS

The hydraulic coupling similar to the automobile fluid drive and an electric coupling consisting of the equivalent of a squirrel cage motor within a rotating field member have been used extensively with Diesel or other internal combustion engines which start under load. These two

devices have transmission efficiencies of 95 per cent or more at capacity.

PORTABLE POWER PLANTS

A. P. Kellog of the General Electric Co. proposes the construction of self-contained power plants of 50,000 kw capacity on light draft (10 ft.) barges, 290 feet long and 43 feet beam. The low bridge clearance would be 15 feet. A 500 hp Diesel unit would be used to start operation from a cold condition. These could be moved to any place on our inland water ways when a power shortage occurred. The U. S. S. *Lexington*, a turbine electric driven ship, supplied Tacoma, Wash. with power in 1929 during a water shortage on the hydro systems from its two 10,000-kw generators. The hull of a ship, *Jacona*, built during the first World War has been used to add 20,000 kw to the capacity of the Public Service Co. of New Hampshire since 1930, and at present is in service near Portsmouth, N. H.

During the year nine portable air compressors driven by gas engines were used to replace a disabled motor-driven compressor of the Chicopee Manufacturing Co. for three weeks until the burned motor could be repaired.

Portable power from gas turbines on railway mounts have been proposed for temporary uses where shortages occur, as this device has proven reliable in the 16 sets now operating in connection with the Howdry method of refining gasoline. The Swiss unit designed for 4000 kw has followed the operation of one locomotive powered with a gas turbine. These units would not be as effective as Diesel engines or the best steam turbines but 20,000 Btu per kwhr might be expected.

HYDRAULIC POWER

The important feature of the activity in the field of hydraulic power has been the great number of new plants and proposed plants. For the year ended June, 1941, there had been installed or ordered a total capacity of 1,749,707 hp, and the proposed program for new hydroelectric plants

by the Federal Power Commission will total almost 5,000,000 hp by the end of 1946, one-quarter of which will be added in each of the years from 1943 to 1946. The Bureau of Reclamation is planning to install a little over 9,000,000 hp during the years 1943-47, of which 4,142,000 hp is firm power. The total planned by them for installation in 1946 is 3,119,000 hp.

GRAND COULEE DAM

One of the two small 10,000 kw house units of the station was started on March 22, 1941, two years ahead of estimated date of starting and five and one-quarter years after pouring the first of the 10,200,000 yards of concrete. The hydro plant is designed for an ultimate capacity of 2,700,000 hp. (Boulder Dam, 1,835,000 hp.)

During the construction of the dam six miles of brine pipe were imbedded in soft mud to freeze it during eight months while the base of one section of the dam was constructed.

The general cooling of the 10,000,000 cubic yards of concrete to establish temperature equilibrium was completed in May, 1941 after five years of work costing \$1,400,000. Two thousand miles of pipe, two miles of intersecting shafts 3½ feet in diameter, and six miles of galleries were required to reduce the temperature of the concrete from 132 F. to 45 F. Columbia River water was pumped through the one-inch pipes by five pumps on one barge and six pumps on another, the total amount being 9,000 gpm. The time of natural cooling would have been a century. To prevent cracking from contraction, an amount of artificial cooling was accomplished before pouring the grout between the individual cast blocks of concrete forming the dam.

WIND TURBINE

A 1000 kw wind turbine has been constructed on top of Grandpa's Knob near Rutland, Vt. Its output will be fed into the power system of the Central Vermont Co. The tower to carry the inclined axis (12½° below

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horizontal) is 110 ft high and 36 feet square at the base. The pintle is a steel plate girder. The blades are 11 feet by 65 feet each with a span between tips of 175 feet. The pitch of the blades can change as in the Kaplan turbine. At a speed of 28.7 rpm the tips move at 15,785 fpm.

PUMPS

A 23 stage centrifugal pump of 120 gpm for hydraulic press work at 1800 psi has been constructed for the R. C. A. Manufacturing Co. by the Byron Jackson Co.

NEW PIPE LINE

For defense purposes and eventually for economic use a 12-inch extra heavy oil line, 236 miles long, has been installed between Portland, Me. and Montreal. This will eliminate 2,000 miles in the round trip of tankers, giving also a 12-months service, as Portland is ice free, and relieve four tankers. By the use of eight pumping stations along the line each raising the pressure 5 psi to 720 psi, 50,000 barrels of oil per day will be handled at 4.5 fps (3.5 mph), taking three days for transit.

RAILWAY MECHANICAL ENGINEERING

The demands for transportation for national defense is reflected in car loading which have crossed those for 1930 at the middle of November, 1941 for the first time in 11 years. During 1941, freight speeds have averaged 16.7 mph which equals previous records, but the trains have been heavier, the average of 33,856 gross ton-miles per train hour has never been equalled before. The average economy of 111 for the freight fuel per 1,000 gross ton-miles is also a record. There were 1,610,000 freight cars at the beginning of the year. For the year ended August 31, 1941, 145,228 new freight cars were ordered.

During the year ended in August, 336 steam locomotives were ordered as well as 26 electric locomotives, two steam turbine electrics, 70 Diesel electrics for road service, and 699 Diesel electrics for switching.

POPPET VALVE TRIALS

The most notable event of the year for locomotives was the laboratory and road tests for the K-4 class of Pennsylvania locomotives equipped with the Franklin oscillating-cam poppet-valve system. The results of these tests indicate a gain in draw bar horsepower of 24% at 60 mph, 33% at 70 mph, and 44% at 80 mph. The top speed with this gear was 88 mph, whereas the original engine made 78.5 mph. When using 70,000 pounds of steam per hour the valves gave an increase of 16% in indicated horse power.

LOCOMOTIVE FEATURES

The water and coal capacity of tenders have been increased to give greater mileage between supply stations. Light-weight reciprocating parts and complete use of roller bearings are evident in new equipment, and by the use of some of them old equipment is modernized.

REBUILDING

Certain locomotives have been brought back to the builder for complete reconstruction. The Erie Railroad has modernized engines of 1923, and the North Western has increased wheel sizes and changed reciprocating parts and cylinder passages of a number of locomotives to permit speeds to be raised from 53 mph to 81 mph. The Chicago, Great Western and the Missouri Pacific are improving the parts of their old locomotives for increased service.

DIESEL FREIGHT POWER

The first Diesel-electric freight locomotive has been put in service on the Atchinson, Topeka and Santa Fe Railroad. It is of four sections, each carried on two trucks with one driving axle and one free axle. These sections are driven by 1350 hp—16 cylinder—two cycle Diesel engines. The road tests indicated that the engine would haul from 49 to 68 cars at 24.3 mph at 5171 thousand gross ton-miles. The full tractive effort is 220,000 lb. The thermal efficiency of this locomotive is 15%.

ELECTRICAL ENGINEERING

The Diesels built by the American Locomotive Co. are usually equipped with Büchi superchargers. This is the case for the Super-Chief of the Santa Fe, a two-unit locomotive for passenger service. Each of these units weighs approximately 325,000 pounds and is carried on two trucks each with three axles. Each section has two 1000 hp engines with 6-12½ x 13 cylinders.

UNIT DRIVEN CARS

The Budd Company has built for the Denver and Rio Grande a series of two-car trains called "Prospectors." They are driven by flat Diesel engines placed under the car, one adjacent to each of the four trucks. They are rated at 192 hp at 1600 rpm from 6-5½ x 6 cylinders. The generators drive motors for each axle. They supply 100 kw for traction and 12 kw for auxiliaries. Speed is 75 mph on level track and 30 mph when climbing a 1.68% grade. These trains

are equipped with Budd disk brakes in which blower cooled disks bolted to the wheels are pressed by shoes on each side covering one-quarter of the area of the disk on the application of air to the brake cylinder.

The Chicago, North Shore and Milwaukee has installed two four-car trains—"Electroliners" for their electric line. Each of four trucks are equipped with 2-125 hp motors. The Illinois Central has introduced cars powered by two single oil engines through mechanical drives.

RAILWAY AIR CONDITIONING

On Jan. 1, 1941, there were 12,200 air-conditioned railway cars of which 5239 were Pullman cars. For this service to relieve the locomotive of power supply and to eliminate batteries, the Waukesha Co. has developed a spark-ignited gas engine unit to fit under the car and supply the necessary refrigeration. The fuel is propane gas taken from liquid containers.

ELECTRICAL ENGINEERING

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SCOPE

Included under electrical engineering are recent developments and applications of apparatus in electric power generation and distribution, illumination, electronics, and communication. Radio and television are included in a separate section.

ELECTRIC POWER OUTPUT

The total output of utilities in the United States for 12 months preceding Nov. 1, 1941 was 161,045,000,000 kilowatt hours. This represents an increase of 15.1 per cent over the 12-month period immediately preceding. There were 3,338,538,000 kilowatts produced during the week ended Nov. 1, 1941, which is the maximum ever produced in a single week. The total installed capacity in the United States

on Oct. 31, 1941 was 43,412,700 kilowatts compared with 41,638,956 kilowatts at the end of 1940.

MANUFACTURING

Estimates of the output of electrical equipment for the year 1941, based on figures available in November, indicate that it will be more than \$3,000,000,000 compared with \$2,000,000,000 for the previous year and \$2,400,000,000 for 1939. The principal increases have been in motors, generators, and transmission and distribution equipment. One large manufacturer reported an increase of orders of 109 per cent, based on the first nine months of the year. Of the total nearly 50 per cent were a result of the defense program. Further expansion of manufacturing is under

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way. One company reports a program of \$50,000,000 and another of \$22,000,000 part of which is being financed by the Defense Plant Corporation.

With the purpose of limiting the use of scarce defense materials the Office of Production Management ordered a reduction in domestic refrigerator output of 45 per cent on Oct. 1. It is expected that other appliances and consumers goods will soon be limited, although electric range output almost doubled in the year.

GENERATORS

Records show a definite trend toward higher pressures, particularly in the smaller sizes. This may be traced to results of problems of manufacture. Aside from advantages of increased efficiency obtained with high pressures, low speed, low pressure equipment becomes large when used for large power outputs, and the construction problems associated with size, therefore, become very complex. It is relatively simpler to use high speeds and to build turbines and electrical dynamos with smaller rotors and frames.

A notable advance in the field of higher pressure generating units was the recent installation of a 2400 p.s.i. topping turbine to drive a 25,000 kilowatt generator. A topping turbine makes use of high pressure steam the exhaust of which may be used to supply a lower pressure unit. The effect of this is to increase the overall efficiency of the generating plant. Another unit operating at 1825 p.s.i. and driving a 22,500 kilowatt generator also was installed in 1941.

This tendency to increase the size of 3600 r.p.m. generators with the use of higher pressure steam turbines and hydrogen cooling has resulted in a new problem for design engineers. The large sizes result in tremendous forces between rotor and stator which, at this speed, produce a vibration of 120 cycles per second. This effect will produce vibration of beams and walls, etc. of the plant as well as an audible roar. While as yet it has not resulted in appreciable mechanical damage, at times there has been considerable ob-

jection to noise by the power plant operators. Effective elimination of this vibration has been brought about by a special type of resilient core construction, a result of considerable study. By this method the stator is not rigidly fastened to the frame but has a flexible mounting which isolates the vibration, and the unit is usually designed to have a resonant frequency above 120 cycles per second.

While hydrogen cooling has solved many problems concerned with high-power, high-speed generators, this method is continually being developed so that it may be used advantageously in smaller generators, several generators with capacities of 20,000 kilowatts having been designed for its use.

TRANSFORMERS

A new silicon steel for use as core material for power distribution transformers has been produced. It has a saturation value approximately one-third higher than that of conventional steels, therefore size and weight of transformers can be considerably reduced by operating at higher flux densities. It is claimed that core losses are no greater at the increased density. The improved characteristics are brought about largely by a new technique in rolling and heat treating.

The increased use of electric power has resulted in more uniform loading of apparatus. This means that transformers may be designed for continuous operation at higher loads. A new design which improves the efficiency and also gives better over-load ratings has come into use. Instead of the iron core being made of flat laminations which are fitted to the winding, the core for this transformer is built up by winding a continuous flat strip over a rectangular form which is later removed after a process of annealing to eliminate strains. Round coils are then wound over the core by rotating the coil forms, or the core may be split and placed over the finished winding. Advantages claimed for this design are reduced exciting current, improved voltage regulation, increased short time over-

load capacity, and less variation of impulse voltage strength because of more uniform windings.

Air-cooled transformers are now available in ratings up to 13,200 volts, 2000 kva. These transformers have no fire or explosion hazard due to the absence of oil, and maintenance costs are lower. They do not need to be placed in a vault and so may be placed near equipment, thus saving secondary cable costs.

CIRCUIT PROTECTION

Circuit breakers are available which, when installed on three phase power lines, trip only the faulted phase on a single phase fault. After the circuit is opened, it is automatically reclosed, and if the fault persists all three phases are tripped. Thus for a temporary fault, stability of the system may be maintained by power flow in the two complete phases. A large percentage of line outages is caused by such single phase to ground faults.

Trial tests made on a 138-kilovolt air blast circuit breaker indicate that it is equivalent to present oil breakers. It has an interrupting capacity of 1,500,000 kva. Previous air breakers were available for use on 37,000 volt circuits. Air breakers are preferred over oil provided they can be made dependable, because they use no inflammable oil and are relatively simple in operation. Another type of air breaker using the magnetic field or de-ion principle to extinguish the arc has been built for 5000 volt circuits with capacities up to 250,000 kva.

Whenever an electric current is interrupted, there is produced in the electric circuit an electric potential called the recovery voltage which may reach dangerous magnitudes depending on the method of interruption and condition of the circuit immediately before interruption. The purpose of the current limiting fuse has been to protect apparatus in the circuit from the excessive currents that may flow in a faulted circuit immediately before interruption. A new fuse which has both current limiting and voltage limiting char-

acteristics has been developed. It consists of two fuse elements. The auxiliary element interrupts first on high currents but, as it is shunted by a resistance, current will continue to flow. The main fuse element then completes the circuit interruption. Tests have shown that its voltage characteristics are good. It has an exceedingly high interrupting capacity.

The increasing electrical load of industrial power plants due to both improved lighting and modern machinery has brought with it a demand for a system of distribution for which such features as economy, flexibility, and reliability must all be duly considered. The well-known secondary network system such as is used by utilities in large metropolitan areas has been designed around very nearly the same considerations. Naturally this type of distribution has been applied to large plants, and considerable work has recently been devoted to designing systems for new plants or changing former systems for enlarged plants. Each plant, of course, presents its own particular problem but the characteristic flexibility of the secondary network system allows it to be applied easily in most cases and also, once installed, permits the addition of new loads so that expansion of facilities need not be too accurately anticipated.

WELDING

A new ignitron tube for use in resistance welding control utilizes a unique water cooling system. The water circulates in the clamp used to support the tube so that in installing a replacement tube it is not necessary to make or break any water connections. This method is particularly adapted to resistance welders as it allows short time high peak currents typical of welding machines.

The heavy instantaneous loads normally employed in resistance welding which cause intermittent low voltage on the supply lines with accompanying effects on lights and machinery may be avoided with the use of stored energy equipment. These stored

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energy systems may be of two types. In the electromagnetic type rectified alternating current is passed through the primary of the welding transformer. If the primary circuit is then opened, the magnetic field of the transformer will suddenly collapse, resulting in a high current surge which makes the weld. In the electrostatic system, condensers are charged from a similar rectifier and discharged suddenly through the primary of the welding transformer. In both systems the line current load is small and at high power factor, and the welding current can usually be very accurately controlled. A disadvantage is that a brief period of time must be allowed between operations to store energy and limits the speed with which successive welds may be made.

ILLUMINATION

A great deal of effort continues to be expended in introducing fluorescent lighting, particularly in industrial applications. Many new defense plants have made extensive installations on assembly floors, in machine tool shops, and in drafting rooms. The tendency has been to take advantage of the increased efficiency and provide much more intense illumination at the working area. A great many companies have begun producing lamps and mounting equipment of many types for use in various applications. However, very high intensity lamps are not available, and installation costs on present equipment are quite high. The fluorescent light has not been generally accepted for domestic use because suitable fixtures are not yet generally available either as new equipment or as replacement for the incandescent fixtures.

Among technical developments have been the improvement of the glow switch type starter auxiliary and the introduction of a new glow switch which automatically shuts off a bad lamp. The starting switch life is determined largely by the number of times the lamp is turned on. Often

the normal life of a switch is appreciably shortened by its attempting to start a worn out lamp.

The R.F. (rectified fluorescent) unit contains a device for converting the alternating current to pulsating direct current. This reduces the stroboscopic effect characteristic of all fluorescent installations which may become objectionable in certain applications, particularly where moving belts or rotating machines are used.

New lamps that have been produced are the 100 watt, 60-inch, and 65-watt, 36-inch units. Although these operate at slightly lower efficiencies, they have a greater output per foot length than the older lamps. Improvements in the fluorescent coating used on the inside of the glass resulted in the "soft white" lamps which have a higher proportion of red color output than have previous lamps, and they may be used in clothing shops to bring out color contrasts or in food stores to improve the appearance of meats and other foods having a natural red color.

Fluorescent lights are now being used in aircraft. In these applications the voltage supply may be 400 cycles or even higher. Tests have shown that high frequency operation increases power factor and efficiency of the lamps. Furthermore the ballast and auxiliary equipment may be smaller. The advantages of this method, which will include a reduced stroboscopic effect, may justify using frequency converters to change 60-cycle current to higher frequencies for general lighting purposes.

Incandescent lighting still holds its place for large requirements in spite of past developments of sodium and mercury vapor type lamps. The world's largest continuously lighted highway, the Queen Elizabeth Way which extends 70 miles between Toronto and Niagara Falls, Canada, is lighted with 6000 lumen, 405 watt lamps. The higher installation costs of other types of equipment and the cheap power available along the entire route were the factors which determined the use of the incandescent units. Sodium units were used at

intersections or other hazardous places as danger signals.

The production of fluorescent lamps continues with an expected output of 20,000,000 lamps for 1941 and 30,000,000 for 1942 compared with 250,000 for 1938. However, this increase is not at the expense of incandescent type lamps, as an output of 630,000,000 is expected for 1941 and 700,000,000 for 1942. At a recent meeting of the Illuminating Engineering Society it was claimed that the average lighting intensity in industry for 1941 was 30-foot candles compared with only 8-foot candles in 1939.

The possibility of using black light or ultraviolet light in blackouts is being investigated. With this invisible light, objects painted with fluorescent materials can be easily seen without creating light which can be easily seen from a distance. Invisible light was used with fluorescent materials as decoration in a movie recently. This is believed to be the first commercial application of this kind.

INDUSTRIAL

X-rays.—A notable advance in the industrial x-ray field was the installation of a 1,000,000-volt unit for use in inspecting boiler welds. Previously the highest potential used was 400,000 volts. The new device will radiograph a four-inch thickness of metal in about one minute as compared with 30 minutes required previously. Similar units have been used by several other industries. X-rays are also being used to detect defects in manufactured cable. The property of x-rays of ionizing air through which they pass was put to use commercially for the first time in the automatic inspection of soldered joints in table knives. The knife passes in front of an x-ray tube and, if the joint does not contain sufficient solder, the intensity of the penetrating beam passing through an ionization chamber causes a current which is amplified and used to operate a relay which rejects the knife.

Heat.—The infra-red lamp is rapidly taking an important place in industry. This lamp produces heat by

radiation rather than by convection as in the ordinary oven. The rays may be focused by the use of proper reflecting surfaces and consequently may be used where localized heat is required. The lamp is manufactured in sizes from 250 watts to larger than 1000 watts and, where there are large pieces, banks of the lamps distribute heat over the surface. This method has been used for rapid paint drying, baking and ageing with various types of installations.

The first use of the Sterilamp in air conditioning a large manufacturing plant has been made with the installation of 104 units. The Sterilamp has a large percentage of ultraviolet radiation which, in this case, renders 40,000 cubic feet of air per minute 95 per cent free of air-borne bacteria. Another use of this lamp has been in medical laboratories to prevent bacteria from contaminating blood samples.

TRANSPORTATION

Railroads.—No new extensive electrification of railroad lines was observed in the past year. Larger diesel-electric type locomotives were constructed, several being of 4000 horsepower each and a number of 2000 horsepower. Complete train facilities in two cars is a recent innovation in railroads. Each of the two cars in these trains generates its own electric power with two diesel engines, rated at 192 horsepower each. Each car also contains two auxiliary generators which are used to supply power for air conditioning, cooking, control equipment, air compressing, and charging current for batteries used to start the motors.

Power Transmission.—A problem on which engineers have been working continuously is that of connecting the driving engine with the driven machine. This problem takes unique form in the case of railroad locomotives or motor vehicles where the power must be transmitted over a very wide range of speeds. A new type of coupling unit which has been under development for a number of years is the "Electrogear." It is based on a differential action between di-

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rectly transmitted mechanical power and electric power in a generator and motor system which are interlinked by means of a planetary gear. As only a part of the energy is converted to electric power, the efficiency of the system is generally high over the entire output speed range, and the system permits the driving motor to run at its most efficient speed.

METERS AND INSTRUMENTS

A current transformer for measuring high direct currents has been developed. It is based upon the principle of the saturation of an inductive iron core by the passage of direct current through a winding on its core. The effect of saturation is to unbalance an alternating current bridge circuit. Currents up to 50,000 amperes can be measured. The method has the advantage of small waste of power compared with the shunt resistance method.

A method of measuring cloud heights in the daytime has been devised for use at airports. A modulated mercury vapor light is focused vertically on the clouds. It is picked up by a sensitive optical system phototube which is placed at a known distance from the beam. The angle of the light exciting the phototube determines the cloud height. The use of a tuned detector working at the modulation frequency reduces background noise allowing high sensitivity. Cloud ceilings as high as 9000 feet have been detected.

A novel method of locating oil leaks in oil-filled cable is one using liquid nitrogen. With the cable out of service a sleeve which is later filled with the liquid nitrogen is mounted at a point on the cable. This freezes the oil at that point, thus isolating a section of the cable. By measuring the loss rate at the end which supplies the oil to the cable the leak may be located by making a series of tests.

The magnetic properties of sheet steel have been used to construct a gauge which will measure its thickness. The gauge consists of a magnetic head which is placed against the plate. The permeability of the flux path

which depends on the thickness of the sheet is the determining factor. The gauge may be used in the center of large flat pieces or in cases where only one side of the material may be accessible. It will read thicknesses of 20 to 45 mils for low-carbon steels and 10 to 25 mils for sheets of medium silicon content.

HIGH SPEED RADIOGRAPHY

X-ray exposures are normally limited by the maximum current which the heated cathode may handle. A technique using cold cathode discharge has been developed which does not have this limitation, so that high currents may be used for very short time intervals to take x-ray pictures of moving objects. The tube will pass currents of approximately 2000 amperes and the time of exposure is about 1 microsecond. The apparatus is arranged to charge condensers to a high voltage which are then discharged through the tube.

RECORDING

The method of recording voice or sound on magnetic tape has been improved with the aid of new developments in magnetic alloys and steels. The result has been a device which may be used in public-speaking classes and instruction in voice or musical instruments. The sound is recorded on the tape by an electromagnet and may be reproduced as often as wanted or stored indefinitely; or it may be immediately "erased" and used again. The same elements are used in recording and reproducing, permitting a simple and relatively inexpensive outfit. The methods of recording mechanically on wax, or photographically on film, have been generally superior to the magnetic type method. The new device, however, gives faithful reproduction of speech or music.

ELECTRONICS

The growing use of ultraviolet light is resulting from the production of efficient sources of this type of energy. It is finding new applications in in-

dustrial, therapeutic, and prophylactic uses. A modern lamp is extremely simple in construction and is self starting, requiring little auxiliary equipment for the lamp itself. It consists of a quartz tube which transmits the ultraviolet efficiently and metal electrodes usually coated with some material which will emit electrons at high temperatures. The electrodes are sealed at the ends of the tube and the tube is filled with specific amounts of mercury and a starting gas, usually argon. Upon application of electric power to the electrodes, current is passed through the tube by the argon gas. This current develops enough heat and ion bombardment completely to vaporize the mercury under a high pressure. These lamps may be used in any position and may be obtained in sizes ranging from a few inches length to 60 inches length and from 200 to 4500 watts input. The accompanying reduction in cost of these lamps compared with previous quartz mercury vapor lamps with pool electrodes has been about four to one, costs being as low as \$35 per kilowatt.

Applications of the lamps are in photo printing with sensitized paper, the lamp producing high intensity and uniform radiation; as milk irradiator which have been installed in many dairies where wave lengths shorter than 3130 angstrom units activate vitamin D; in destroying bacteria, fungi, molds and spores; in industrial operation such as hardening enamel coatings, curing leather; as a catalyst in plastics and rubber industries; and in testing and aging certain products.

A new phototube has been developed which uses secondary emission to give a large current output. It contains nine dynodes which enable a gain of more than 1,000,000 to be obtained under optimum conditions and it has a sensitivity of about 10 amperes per lumen. It is the size of a modern small receiving vacuum tube.

Research on the electron microscope has resulted in the production of a commercial unit for use by

relatively unskilled technicians in laboratories. It is capable of magnification up to 100,000 diameters as compared with 2000 or 3000 diameters obtainable in present models using visible light. In the electron microscope high speed electrons are used instead of light, and they are focused by "magnetic lenses" in a fashion similar to that of the light microscope using glass lenses. Magnification in light microscopes is limited by diffraction of the rays, which is determined by the wave length of the light. For this reason the microscopes with highest resolving power have been those using ultra violet light. The high speed electrons have a much shorter effective wave length and therefore the higher magnification may be obtained. One of the most important uses of this instrument is expected to be in the medical profession where its value has already been demonstrated with tests on various bacterial and virus preparations. Limitations of the instrument are that extremely thin films of the samples for study must be obtained (the ordinary glass slide can not be used) and they must be placed in a vacuum. Also the great depth of focus makes it difficult to differentiate top, bottom, or middle of the object.

COMMUNICATION

Aurora Borealis.—A severe electrical storm occurred in the middle of September which lasted about a week. The most disturbing effect of it was in the interference with radio and telephone and telegraph communication. Radio waves, particularly at higher frequencies, depend upon a so-called sky wave which is reflected to the ground from the ionosphere, a layer of ionized particles about 30 miles or more from the earth's surface for transmission through the atmosphere. A group of sun spots, which usually accompany these electrical disturbances, was observed on the edge of the sun, Sept. 10. This was accompanied by auroral displays every night until Sept. 18 when one of the most spectacular displays was seen. Radio communication was generally

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poor during this period and for a week thereafter, reception from European stations being generally weak and intermittent and accompanied with considerable noise. Also, communication could at times be observed at frequencies higher than are normally useful. These disturbances indicate that charged particles resulting from sun spots enter the earth's atmosphere and break up the ionized layer causing the erratic effects.

Telephony.—Estimates during the middle of 1941 indicate that there were approximately 45,000,000 telephones in the world although exact figures were not available because of the war situation. This figure may be compared with 42,600,000 at the beginning of 1940. About 56 per cent of the total are dial type telephones and very nearly half of the total are in use in the United States.

The 200-mile installation of a coaxial cable between Stevens Point, Wis., and Minneapolis, Minn. was completed early in 1941 and placed in commercial service with terminal facilities for 48 circuits. There are four coaxial tubes in the cable and there are 37 repeaters between terminals. The coaxial cable was used as an experimental circuit for transmission of television signals. This circuit represented a distance of 800 miles, and very good results were obtained. The results of these tests extended information gained from tests on the 190-mile coaxial circuits previously

installed between Philadelphia and New York.

RESEARCH AND DEVELOPMENT

Quite extensive study of cable insulations is being undertaken. The oil-filled cable has been useful in underground high voltage transmission, particularly in large cities, but there has been considerable desire to eliminate the use of the oil. New studies of uses of plastics, such as styrene, both in continuous cables and cable joints have proved worthwhile, and work has also been done on the use of mixtures of resin and oil. Methods of the non-destructive testing of cable insulation by observing dielectric loss, conductivity, power factor, and polarization at various frequencies and temperatures are also receiving much attention. Such methods are particularly useful for field testing of equipment in service.

Copper and aluminum are probably the two most needed materials in the electrical industry. The defense program has brought about an acute shortage of both materials. Copper is almost irreplaceable, and a large amount of what is available is being used by electrical manufacturers. However, much time is being devoted to finding substitutes for aluminum and other materials and to the development of plastics which have already found a definite place in the industry.

RADIO

BY LEWIS M. CLEMENT*
THE CROSLEY CORPORATION

HOUSEHOLD RECEIVERS

Priorities requirements due to defense needs exerted an increasingly important influence on radio receiver design as the year advanced. While the impact of actual war occurred too

late to have any pronounced effect during 1941, it presaged more violent dislocation of the industry.

The early classification of aluminum as a critical material led to several important design changes. Condensers with steel plates appeared, and circuits enabling the use of condensers of small capacity or of no

* The author wishes to acknowledge the help of Mr. C. E. Kilgour of The Crosley Corporation in the preparation of this review.

capacity at all became more popular. The low impedance loop can be used with a condenser of smaller range than that required with the large loop which furnishes all of the input circuit inductance. Permeability tuned circuits employing movable cores of finely divided iron dispense with the need of conventional variable condensers entirely.

As the year progressed, other metals were placed in the critical category. Accordingly designs were developed requiring a minimum of copper. Loud speakers with small permanent magnets avoided the usual field winding with its substantial quantity of copper wire. Silver wire, plentiful though expensive, was seriously considered as a substitute in certain limited applications. Coil and tube shields were made of zinc or foil-coated paper. Plastics, at first considered as an acceptable substitute for metal, became scarce so that their use for cabinets had to be dropped and reliance placed on that old standby, wood.

Material shortages accelerated industry standardization, which was notably applied to tube types and dry cells for farm and portable receivers. In this last instance, the trend was away from the use of battery packs and toward the use of combination of a few types of separate units.

Trends which were not influenced by defense needs included a growing number of portables with detachable loops and the increasing popularity of console models. The interest in frequency modulation transmission grew with the increasing number of stations. In localities, where programs of this type were available, approximately one third of all console models sold were equipped for F.M. reception as the year came to a close.

PHONOGRAPH COMBINATIONS

The public acceptance of phonograph combinations grew during the year and sales were more important both in number of units and dollar value. Record changers were in greater demand, being used even in table models to a considerable extent. The slide-out drawer for housing the

phonograph unit was widely used. The year saw considerable technical improvement in performance, especially in that of the pickup. Serious effort was made by designers to reduce scratch radiated directly from the record surface as well as reproduced scratch, and to reduce record wear.

In some instances this was accomplished by reducing the mass of the stylus and increasing the compliance of the member coupling it to the reproducing unit, which was universally of the crystal type. One outstanding development combined these features with the use of a jewel point of relatively large diameter, thereby attaining both the objects mentioned and surprisingly enough giving better reproduction of high frequencies, both in quality and volume. Another pleasing accomplishment of this device is the ability to play a record badly worn by the usual sharp pointed stylus and give a remarkably good performance.

AUTOMOBILE RECEIVERS

Permeability tuning was used almost universally in automobile sets; trigger tuning so popular in 1940 was supplanted to a considerable extent by push buttons located on the receiver case for automatic station selection. Although there were no outstanding developments from the users' viewpoint, auto radio continued to grow in importance in the industry, advancing to over 20 per cent of units sold and approximately 21.5 per cent in dollar value.

RADIO RECEIVER SALES

Reports covering the first three quarters of the year divided radio receiver sales approximately as shown below:

Type	Units %	Value %
Table Models.....	44.6	27.1
Console Models.....	4.6	10.8
Portable Models.....	12.7	9.7
Auto Models.....	20.3	21.5
Farm Battery Models.....	5.5	4.4
Phono Combination Models....	8.5	23.0

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Miscellaneous classifications made up the balance. Approximately 11,000,000 radio receivers of all types were sold in the United States during 1940. Comparing the record for the first nine months of 1941 with that of the previous year, it is found that 1941 shows an increase in the number of units of 24 per cent and in product value of about 28 per cent; at this rate the total sales for the year should reach almost 14,000,000 units.

BROADCAST STATIONS

Pursuant to the North American Regional Broadcasting agreement the Federal Communications Commission ordered all broadcast stations to conform to the agreement beginning at 3:00 A.M. EST, March 29, 1941. In all, some 795 of the 883 stations shifted to new frequency assignments. The general scheme involved the widening of the band to 1600 K.C. and moving stations to higher frequencies to clear a number of channels for the use of Canadian and Mexican stations. Broadcasters on frequencies of 730 K.C. or lower were not moved. Those on higher frequencies were moved up by progressively larger jumps according to their position in the broadcast spectrum. There were exceptions to the general rule, where stations were moved various amounts in either direction to satisfy particular requirements, such as the minimizing of regional interference. Although the move required considerable changing of equipment on the part of transmission engineers and the resetting of millions of push buttons on home receivers, it was accomplished in a reasonable period, and before the end of the year the new order was accepted as a matter of course. A probable forerunner of more to follow was a booster station in Washington, D. C. This transmitter picks up the signal from a local suburban station which is poorly received in the downtown district and re-radiates it at a considerably stepped up field strength. The tech-

nical problems involved in this operation are difficult but the need for such service is felt in many localities.

INTERNATIONAL BROADCASTING

The development of powerful short wave transmitters for reception in foreign countries progressed considerably in 1941. The government had required that such stations use a minimum power of 50 kilowatts as soon as necessary equipment could be provided.

TUBE DEVELOPMENT

An interesting development in transmitting tubes for use at the high frequencies used in international broadcasting was one capable of use in a push pull parallel arrangement in the final class C stage to give 100 K.W. output. Such operation was made possible by an infolded water-cooled plate construction making possible the use of short stem leads.

TELEVISION

Television made but little progress during the year. The uncertainties of impending war no doubt discouraged any substantial ventures into a field which in any case has many difficult problems.

SERVICE EQUIPMENT AND PUBLIC ADDRESS SYSTEMS

In the fields of Service Equipment and Public Address Systems, the large demand for equipment of all types by manufacturers of defense material placed such a load on the suppliers that no attention could be given to the design of new apparatus but all effort was devoted to the production of those types already available.

POLICE RADIO

As in the year before, 1941 marked a continued increase in the use of two-way radio by police departments. The value of such systems has been so well established that even the smaller cities now feel they must have this service.

TECHNICAL PROGRESS IN SOUND EQUIPMENT

By M. C. BATSEL

SOUND ENGINEERING DEPARTMENT, RCA MANUFACTURING COMPANY

COMMERCIAL SOUND

The Public Address business advanced to a new level during the year, 1941. Due to the increase in manufacturing activity the sale of Public Address equipment to industrial concerns reached a new peak. This business has been further stimulated by the purchase of equipment by the Government.

The trend in design of amplifiers has been toward units of higher power output. Standardization efforts have been made on circuits and tubes to facilitate manufacture and stocking of spare parts.

Microphones having various directional characteristics continue to be in demand. The general line was expanded to include units of smaller size, lower cost, and extended frequency range. The defense priority on high permeability steels has forced the substitution of alternate materials, and designs have been evolved which give satisfactory performance.

Loudspeakers design for speech use having a 360° distribution angle were introduced. High fidelity two-way speakers continued to be in demand. Instantaneous recording blanks in which glass replaced the aluminum base were placed on the market.

SOUND MOTION PICTURE RECORDING EQUIPMENT

During 1941 there continued to be gains in the quality of the sound as heard in the theaters. This was due both to improvements in the performance of the recording apparatus and to the excellence of the technique employed in using it. The increasing use of fine grain film has resulted in quieter sound tracks and in less attenuation of high frequencies. With the fine grain film came the more general use of high pressure mercury vapor lamps for recording and for printing.

The use of 16 mm. film for direct recording in the production of some motion pictures for non-theatrical release has increased and shows great promise because of its lower cost and the elimination of the fire hazard.

One development of value to many fields, in addition to sound recording, is the non-reflective treatment of optical surfaces to improve their light transmission, reduce stray light, etc. This treatment is being used commercially on recording, optical systems, camera lenses, projection lenses, etc., in the motion picture industry.

SOUND MOTION PICTURE REPRODUCING EQUIPMENT 35 MM.

The interest shown in 1940 to have music reproduced with the "spread effect" or auditory perspective obtained with an actual orchestra was carried over into 1941 with considerable interest. Outstanding demonstrations of this type reproduction were made during 1941. However, the equipment required for such exhibitions is quite elaborate. It was, therefore, supplemented with an improved "control track" which, while not having as good binaural features, gives a noticeable "spread effect" and has equally as good a dynamic range. It received favorable acceptance and is desired by those wishing a less extensive apparatus. It is noteworthy to mention that several pictures have been released including a track adjacent to the normal sound track area for operation of this latter system.

A projection lens coating material has been developed which, by reducing reflections, increases the light transmission and the contrast and definition of the projected picture very materially.

Considerable work has been accomplished by the industry as a whole

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to have the design of new theaters suitable for the reproduction of sound and projection of pictures.

BROADCAST SPEECH INPUT EQUIPMENT

Progress as far as new developments in the speech input business are concerned was quite definitely curtailed by the press of defense activities. However, considerable redesign of existing products was made to utilize available materials, many of the materials normally used in broadcast equipment having gone on the priority list. The mere keeping of the existing line on the market, even though in reduced quantities, was an accomplishment in itself when all the factors of over-loaded manufacturing facilities and long-time deliveries of even the non-essential materials are considered.

The design groups which remained working on speech input equipment have done considerable development work on new equipment that will not show up until after the duration period. It would be futile to attempt to put such designs on the market at the present time since the performance of such equipment would be impaired due to the necessity of using alternate materials.

Advantage of the lull in present manufacturing of speech input equipment is being taken by both NAB and RMA. These groups are now setting up standards of performance and characteristics of broadcast equipment. Such standards will furnish the manufacturers with design tolerances that are sometimes a subject of much discussion when left to the individual concerns. The result of manufacturing to such standardized tolerances will be of great value to the broadcasters.

INDUSTRIAL SOUND

During 1941 there was a marked increase in the use of sound systems in industrial plants. Paging is one of the important uses found for a sound system in a plant. Announcements and the distribution of musical programs are another use finding increasing importance. Distribution of alarm signals has naturally followed with the use of sound systems. This need for expanded communication has led to coordinated systems using presently available commercial sound components. It has also encouraged the design of some special components such as speakers and amplifiers of higher power to overcome noise levels often encountered in industrial plants.

AUTOMOTIVE ENGINEERING

By THOMAS A. BISSELL

TECHNICAL EDITOR, *SAE Journal*

GENERAL

For the third successive year, developments in the drive and its control stand out among the mechanical improvements made. Three passenger-car makers announce new semi-automatic drives, and previously announced automatic and semi-automatic units have been refined and improved. Instead of radically new mechanisms, the new drives feature various combinations of tried and proved devices—fluid couplings, vacuum-operated clutches, semi-auto-

matic transmissions, and overdrives— assembled and controlled in ingenious ways to produce novel and flexible means of driver control.

Eight engines had been shifted to iron or steel pistons at the time of their announcement, and most of those that still carry aluminum pistons are scheduled to change within the very near future. In spite of these changes, with a few exceptions, the 1942 engines have been made more powerful, and many have higher compression ratios. One engine innova-

tion is the rough-surfacing of crank-pins, which is claimed to aid lubrication and increase bearing capacity and life. Introduction of this process has touched off a sharp debate on the relative merits of smooth *versus* rough bearing journals.

Riding comfort has been increased in a number of makes by revising spring rates, introducing spring leaf inserts of various materials, and improving spring lubrication. One company has increased ride stability to such an extent by adoption of wide-base tire rims that one stabilizer has been eliminated and another made lighter. This company also pioneers with a foot-operated parking brake. A greater proportion of the braking effort has been shifted to the front wheels in most of the brake changes made. One maker introduces a white wheel trim ring which extends over tires and gives the illusion of white side walls.

A trend in body design carried out in many of the 1942 models is the extension of the front fenders so that they flow into or through the front doors, and some of the rear fenders now flow into the rear doors. A number of bodies have been lowered through changes in the frames, springs, and/or wheel and tire size, and a few have longer wheelbases. Outside running boards have all but disappeared, being available only on a few very low-priced cars and several high-priced conservatively styled models. An innovation worthy of mention is the recessed headlamps found in one line of cars which have sliding flush-type shutters to conceal and protect them in the daytime. Directional signals appear on additional lines and are further standardized. Another novelty in car lighting is the concealed running-board illumination introduced by one maker.

ENGINES

Although eight designs of passenger-car engines already had been shifted from aluminum-alloy to cast-iron or cast-steel pistons at the time of their announcement, the upward trend in horsepower and compression ratio

continues. Often, engine bore or stroke was increased, exhaust back pressure reduced by opening up the exhaust system, or manifold restrictions eliminated at the same time that changes were made to heavier cast-iron or cast-steel pistons, with the net result that power was increased. In some cases, connecting rods of heavier section or stronger material, larger or different-type bearings of greater fatigue life, and/or heavier crankshafts have been required simultaneously to accommodate the heavier pistons.

CYLINDERS AND VALVES

Elimination of aluminum-alloy cylinder heads and of the nickel content in valves has necessitated a number of design changes announced under this heading. Furthermore, adoption of cast-iron pistons has required suitable changes in the combustion-chamber design and compression ratios of a number of engines.

With the elimination of nickel from valves of one line, a deeper cantilever section was required in the valve head to produce the required hot strength, and the angle of the under side of the valve head was increased from eight to 15 deg. Chrome-molybdenum alloy steel now replaces chrome tungsten for valve seat inserts in several lines.

Cams on the camshaft of one line of engines are now tapered with the high side to the rear. The cams now hit the bottom of the tappets slightly off center, and this action causes the tappets to revolve.

PISTONS AND RINGS

New cast-iron or cast-steel pistons on eight of the 1942 engines overshadow developments in this field. These pistons weight from 42% to 84% more than their aluminum-alloy predecessors, and are protected by either a tin or insoluble-phosphate coating.

Cast-iron pistons of one high-volume engine, designed to accommodate the larger 3¼ in. bore of the 1942 engine, weigh 25.29 oz. as compared with 14.5 oz. for the aluminum-

alloy pistons in the 1941 engine with a bore of $3\frac{1}{8}$ in. They are cam ground and employ chilled iron ribs to reinforce the piston walls. The sidewalls of these cast-iron pistons measures 0.035 to 0.050 in. at its thinnest point. New pistons on one 8-cyl. engine are of cast-steel alloy and are said to weigh only 42% more than their aluminum-alloy predecessors. It is claimed that these steel-alloy pistons are lighter than comparable cast-iron pistons which weigh as much as 84% more than equivalent aluminum-alloy pistons because, owing to the greater strength of this material, it can be cast in thinner sections.

To provide the additional strength and stiffness required for cast-iron pistons on one 8-cyl. engine, which weigh about 75% more than their aluminum-alloy predecessors, one maker now uses a stronger steel, SAE 1340 manganese, for its connecting rods, instead of SAE 1040 formerly employed. In addition, connecting rods are shot-blasted. On another 8-cyl. engine, a stiffer connecting rod that is about 5% heavier is used.

CRANKSHAFTS AND VENTILATION

Adoption of cast-iron and cast-steel pistons has necessitated heavier crankshafts with larger bearings on some engines. On others, a change to the new thin-babbitt bearings has provided the required additional bearing fatigue strength. Vibration dampers have been added on several crankshafts. Several unique features appear. One maker introduces an unorthodox "rough" finish on its crankpins, claimed to increase bearing life and capacity; another has come out with a "flexible" flywheel said to cushion crankshaft deflections; and a third introduces "tapered-wall" bearings. These bearings are thicker on the tops than on the sides and are claimed to equalize the pressure all the way around the crankshaft and make the bearings dimensionally exact.

Because of the increase in bore and shift to cast-iron pistons, the crankshaft of one high-production engine has been made heavier and a vibra-

tion damper added for the first time. Main bearings are now $2\frac{1}{2}$ in. in diameter instead of $2\frac{1}{4}$ in.; connecting-rod bearings are $2\frac{1}{16}$ in. instead of $1\frac{15}{16}$ in. in diameter.

One manufacturer introduces a new rough finish on its crankpins in its 1942 crankshafts. Instead of the regular machining, grinding, and lapping operations that give crankpins a highly polished surface with an average depth of surface depressions of 4 to 5 micro-in., the crankpins are first rough-ground and finished to take off the tops only of the irregularities to about 40 to 70 micro-in., so that the surface contains thousands of microscopic depressions. These depressions are claimed to serve as minute oil reservoirs that help to maintain the oil film under heavy load. The rough-surfaced journals are said, therefore, to increase bearing life and the capacity of the bearings to stand heavy loads.

LUBRICATION

Re-design of the oil cleaners of one line of cars to eliminate its aluminum-alloy cover features the lubrication developments. Re-design was undertaken to eliminate its aluminum-alloy die-cast cover and replace it with a steel stamping, but other design changes were made simultaneously which made the cleaner markedly superior. The dirt-retaining basin was made four times larger; the oil outlet was made concentric with the basin so that each drop of oil would travel approximately the same distance through the cleaner and at practically identical velocity with every other oil particle. The 1942 filter has an efficiency of from two to three times the original filter for fine dirt that will just go through an 80- to 100-mesh screen.

COOLING SYSTEMS

Wider, lower radiator grilles and novel bumper constructions have changed the location of the air inlets to the radiator cores and arrangement of baffling in a number of cars. Other developments include revision of cylinder cooling control, and changes in

fan type and drive and in water-jacket design.

The new wider, shorter shape of the radiator grille and the deeper-sectioned front bumper of one 1942 line cause different airflow characteristics and necessitate the use of a new radiator core. This core has a frontal area $5\frac{1}{2}$ in. greater; it is both lower and wider.

A novel feature of the front-end construction of several 1942 lines is an additional air intake or scoop located behind and under the bumper. In construction, the splash pan is pulled down to form the lower part of the additional air intake, and the upper part of the passage is formed by the gravel shield that connects the front bumper and radiator grille. The air is delivered to the scoop under and through the bumper and is guided by suitable baffles to the radiator core. On another line, a new double-bumper construction locates the radiator grille between the two bumper bars.

FUEL SYSTEMS

Back pressure of several 8-cyl. engines has been decreased by increasing the diameter of the exhaust pipes, both muffler pipe and tail pipe, and by employing a larger muffler which is oval-shaped to give more ground clearance.

An automatic signal is provided on fuel tanks of one line which whistles continuously while the tank is being filled until it is within one gallon of full. When this level is reached, the signal stops, thus warning against overflow.

ELECTRICAL SYSTEMS

Revisions in the electrical system have been made all through the cars, and a novel headlamp construction is introduced.

Tops of all convertibles made by one large corporation are now operated by electric motors, one on each side of the body, instead of the vacuum cylinders used previously. Two buttons on the instrument board control the movement by means of a two-way switch.

Another maker introduces a novel feature in the "steel eyelids" or sliding shutters used to cover its headlamps in the daytime. The headlamps are recessed in the crown of the fenders so that, when they are covered by the shutters, the shutters continue unbroken the contour of the fenders. The shutters are opened for night driving and closed for day driving by means of a handle located under the instrument panel. Pulling the lever opens the shutters, turns on the lights; pushing it closes the shutters and turns the lights off.

ENGINE MOUNTINGS

The two-engine radius rods formerly used in conjunction with the torque-tube drives of two lines of cars have been eliminated to minimize the conduction of engine noise to the frame and body, and a new rubber cradle-type rear engine mounting that takes the end thrust is now used.

TRANSMISSIONS

Three new semi-automatic drives contribute the outstanding mechanical innovations in the 1942 cars. Rather than introducing new mechanisms, all three of these drives employ combinations of well-known devices which have been in successful use for some time, such as fluid flywheels, vacuum-operated clutches, and/or conventional clutches in combination with vacuum-operated semi-automatic transmissions with or without overdrive. The three drives vary considerably in the types of units combined and the methods by which they are controlled under various driving conditions.

The first design offers unusual flexibility of operation. This drive combines a vacuum-operated clutch and a conventional clutch, with a three-speed semi-automatic transmission. This semi-automatic transmission provides semi-automatic operation controlled by the accelerator pedal between second and third gears.

The forementioned flexibility of operation is obtained by permitting the driver to choose any one of three

driving methods by pressing one of three buttons on the instrument panel marked: "Off," "Vac," or "HDM." Depressing the "Off" button will permit conventional operation of the gearshift lever and clutch. Pushing down the "Vac" button will give semi-automatic clutch operation. Pressing the "HDM" button cuts in the combined semi-automatic clutch and transmission system. Another feature that contributes to the flexibility of the system is that gears may be operated manually or the clutch operated conventionally any time the driver desires, regardless of which of the three driving methods is in operation, or of car speed.

The second new drive consists essentially of a fluid coupling, a semi-automatic clutch, and semi-automatic overdrive transmission, with suitable mechanical and electrical control. The semi-automatic overdrive transmission comprises a conventional three-speed transmission combined with an overdrive of the type that is controlled entirely by inserting or withdrawing a pawl from the collar of the sun gear to lock or release the overdrive.

Because of the semi-automatic action of the clutch, which is controlled by the throttle and a centrifugal governor, the clutch pedal is eliminated. The transmission, in conjunction with this clutch, is semi-automatic in operation. For most city driving, the second-gear position of the gearshift lever and semi-automatic operation in the "traffic range" between second gear and second-gear overdrive are recommended. For road driving in the "cruising range," however, the high-gear position of the gearshift lever is specified with semi-automatic operation between high gear and high gear overdrive. Thus only an occasional manual gearshift between second and third gears is required for most normal driving. Use of low gear is recommended only for starting under extremely poor road conditions.

At speeds above 14 mph, the change from conventional to overdrive is accomplished by lifting the foot mo-

mentarily from the accelerator pedal; the return to conventional gear can be made at any speed by pressing the accelerator all the way through. In addition, as the car coasts down to speeds below 6 mph, a centrifugal governor acts automatically to release the overdrive and return the car to conventional gear.

The torque of the engine is transmitted at all times through the fluid coupling.

A conventional single-plate clutch is located at the rear of the fluid coupling.

The third new drive comprises essentially a fluid coupling, conventional clutch, and a semi-automatic three-speed transmission provided with an over-running clutch on the transmission countershaft. In addition, an overdrive sometimes is employed to provide two extra speeds in the forward semi-automatic driving range. A conventional shift lever and clutch are employed to place the drive in one of three possible positions: reverse, an emergency low recommended only on extremely steep grades and in heavy sand or mud, and the forward driving range in the high-gear position which is used under all ordinary driving conditions.

In operation as installed without overdrive, the gearshift lever is shifted from neutral to the high position in the conventional manner, and left there for all normal driving conditions. All ordinary driving from then on is done by operation of the accelerator pedal and clutch. In starting, the drive is through the fluid flywheel, clutch, and second-gear train in the transmission. The ratio of this second gear has been raised to 1.83:1 for quicker get-away. At any time after the car speed has reached approximately 12 mph, the centrifugal governor of the automatic transmission will permit the vacuum cylinder to shift the transmission from second to high when the driver's foot is lifted momentarily from the accelerator. For additional acceleration at speeds below 35 mph, the transmission can be shifted back to second gear by pushing the accelerator pedal all the

way down. Above 35 mph, the transmission will remain in high gear. When the speed of the car decreases to below 10 mph, the gears are shifted automatically from high to second. Thus, the transmission is always returned to second gear ready to start as the car slows down during stopping. The slipping action of the fluid fly-wheel permits the car to be stopped at any time simply by applying the brakes.

When an overdrive is added, six forward speeds instead of three are made available to the driver as follows: first, first-overdrive, second, second-overdrive, high, and high-overdrive.

REAR AXLES

With heavier cast-iron or cast-steel pistons and accompanying slower top engine speeds and with three new semi-automatic transmissions, there has been considerable re-alignment of rear-axle gear ratios in the 1942 cars.

BRAKES

Many changes in the 1942 brakes are toward increasing the proportion of the total braking effort taken by the front wheels. In most cases the front wheels are given a greater braking capacity either by increasing the brake width or by increasing the size of the front wheel brake pistons. Several innovations are introduced in the control of parking brakes: one maker announces foot-pedal operation; a second now uses a T-shaped lever.

The T-shaped hand-brake lever is located several inches below the instrument panel on the left-hand side. To apply the hand brake, the T-shaped lever is pulled out; to release the brake, the lever is twisted.

The foot-pedal hand-brake control is located above the floor-board on the extreme left of the car. Depressing this pedal with the foot engages the parking brakes, and pushing a T-shaped hand control on the lower left corner of the dash sets them. Brakes are released by pulling out the same hand control.

WHEELS, RIMS, AND TIRES

One maker has gone over to the new wide-base rims on its 1942 models, 1 in. and 1½ in. wider than in 1941. Tire sizes remain the same as in 1940, although the recommended air pressure has been reduced to 25 psi.

To give a dressy appearance similar to white-wall tires that have been discontinued to save rubber and zinc oxide for defense, one maker has developed a white wheel trim ring which clamps into the space between the hub cap and extends over the tire rim to give the impression of white tire sidewalls from a distance.

REAR SUSPENSIONS

A number of changes in rear suspension have been made to permit frames and bodies to be lowered, to revise spring rates, and to improve lubrication.

Because of the increased tire and wheel stability gained by the adoption of wide-base rims, one maker has been able to eliminate the rear stabilizer on all models.

FRONT SUSPENSIONS

Changes in front suspensions have been made for many reasons—to lower frames and bodies, to revise spring rates, to improve lubrication, and to accommodate new wide-base rims or increased car weights.

Because of the increased stability obtained with new wide-base rims, one model has been able to use a lighter front stabilizer.

FRAMES

New wider and lower bodies, longer wheelbases, and changes from outside to concealed running boards are responsible for the majority of changes made in the 1942 frames.

STEERING SYSTEMS

A new transverse radius bar, called a "track" bar, has been added to the front end of two models to take care of side forces in steering and to insure alignment of axle and frame. This bar extends from the steering gear to

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the right end of the axle, parallel to the transverse drag link.

EQUIPMENT

Extensive re-design of several heating and ventilating systems highlights the developments in this field. Virtually all systems are now provided with fresh air intakes located at the front of the car to utilize the air pressure induced by the car's forward motion. Directional signals appear on additional lines and are further standardized. Trumpet-type steel horns replace the zinc-alloy seashell type formerly used.

GRILLES AND SHEET METAL

The 1942 models continue the trend toward wider, lower, heavier-appearing radiator grilles. In many models the grilles appear to extend across the full front width of the car, the effect being obtained by dummy grilles extending across the front of the fenders. In keeping with this general trend, headlamps have been spread as much as 15 in. farther apart, front bumpers are wider and heavier, and parking lights have been re-positioned.

Extension of the front fenders so

that they sweep back into or through the front doors is one of the outstanding innovations in appearance of many of the 1942 models. In some of these bodies the rear fenders also extend forward into the rear door. Many of the new bodies are stamped originally in this form but, on other models, the rear end of the fender which swings with door, or the "fender cap," is a dummy because the main fender ends in a vertical steel wall where the fender cap begins. The wall is curved to provide clearance for the cap when the door is opened. The fender cap is not a part of the door but is a separate part bolted to the door. Removal for repair or replacement is easy because the bolts are accessible when reached from underneath the cap.

BODIES

The trend toward wider bodies continues for 1942, although there are fewer really new designs. Concealed running boards now have replaced the exposed type on all but a few models. They are illuminated at night when the doors are opened on one line of cars. Two-door, close-coupled sedan-coupes with straight streamlined backs continue to gain in popularity.

NAVAL ARCHITECTURE AND MARINE ENGINEERING

By JAMES L. BATES

UNITED STATES MARITIME COMMISSION

GENERAL PROGRESS

By the fall of 1940 it became apparent that a big shipbuilding drive would have to be undertaken in the American yards to carry the heavy load which preparations for defense had imposed on the Merchant Marine and to provide ships to carry supplies to Great Britain. The United States Maritime Commission's Long Range Building Program had been stepped up in 1939 from 50 ships a year to 100 ships a year in anticipation of heavy demands for shipping should a war develop.

In January 1940, shortly after the

British had contracted for 60 ships, the Maritime Commission announced its emergency construction program for 200 cargo ships of 10,000-tons deadweight. The Lend-Lease Act required a further expansion, and 227 additional cargo vessels and tankers were contracted for. Subsequently, at various times, the shipbuilding program was enlarged; approximately 1,200 new ships will be placed in operation between July 1, 1941 and the end of 1943, exclusive of miscellaneous vessels and vessels for service on the Great Lakes.

In addition to new construction a

considerable number of ships of Axis and Axis-dominated countries had been taken over and re-conditioned for service, and considerable repair work on British ships, both naval and merchant types, has been accomplished.

SHIPYARDS

The expanded programs covering the building of long range type vessels are being handled by the yards which were building these types previously. By standardizing these vessels into three general types, it was possible to introduce some of the advantages of mass production into shipbuilding. The training which both management and workers obtained in building these ships prepared the industry to undertake the program of expansion without undue delay and confusion. It was found necessary to increase the number of ways and other facilities in these yards in order to obtain delivery of the ships within the desired time.

In order to construct the Liberty ships building under the Emergency Construction Programs, it was necessary to expand shipyard facilities. These ships were designed to avoid bottlenecks developing in the production of turbine machinery and mechanical reduction gearing. Extensive use is made of welding, and the purchasing of materials and equipments for these ships through centralized purchases reduces delays in procurement to a minimum. It is to be noted that no recourse is being made to pre-fabrication of steel in plants other than the shipyards actually constructing the ships. It is expected that these methods of construction will result in more rapid building of ships than was done in the last war.

The locations of these expanded building facilities were determined so that they would interfere as little as possible with shipbuilding work already under way or any other national defense activities. Such matters as housing, transportation, power, and labor markets were vital points considered in the location selected. The recruiting and training of workers,

both skilled and semi-skilled, required for this expanded industry has been a problem of great magnitude. Through the concerted efforts of the various defense agencies, it is expected that no serious delay will be experienced in maintaining the scheduled delivery of vessels because of the shortage of labor.

The shipyards that are building or have built steel ships included in the Maritime Commission's programs are located as follows: East Coast, 16 yards; Gulf Coast, eight yards; West Coast, nine yards; and on the Great Lakes, six yards. These yards do not include those building small special types such as coastal tankers; sea-going tugs; rescue vessels, etc.

A thorough survey has been made of all existing shipbuilding facilities. The endeavor is to utilize all yards, both large and small, to the greatest possible extent. It has been found necessary in some instances to repair existing facilities in order to obtain the desired deliveries. The same procedure was followed in connection with builders of propelling machinery with the result that the work has been spread over a large number of both small and large engine builders. In some instances a number of concerns adjacent to one another pooled their facilities in order to be able to construct some of the smaller vessels. The reinforced concrete oil barges are to be built in three yards, one each on the East, Gulf, and West Coasts. These yards will be especially constructed for the purpose.

DESIGN CONSIDERATIONS

Time being of the essence in the present emergency, the factor of supply in respect to materials, engines, and electrical equipment influenced greatly the design of the various ships included in the building programs. In the Liberty ships, for instance, steam reciprocating engines were resorted to, it being found that these engines could be obtained in the required number and within the time limit. For the same reason, cargo winches are steam-driven; cargo booms are of wood, as are also the lifeboats.

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For the design of the tankers in the augmented tanker program, turbo-electric drive was selected to avoid further overloading the gear-cutting facilities. It was found necessary to expand the turbine and gear capacity of the country in order to provide an adequate supply for the turbine vessels of the long range program and for the vessels building for the navy.

The emergency conditions have affected the stowage factors of cargoes to such an extent that the need today is for deadweight capacity rather than cubic. Additional deadweight capacity has been obtained by permitting all vessels to load in the summer zones to their tropical load lines and in the case of shelter-deck ships deeper loading is permitted to the fresh water mark.

The use of cast iron has been greatly restricted in order to prevent cracking in case the vessel is subjected to heavy vibration due to nearby bomb or mine explosion.

In every design full consideration is given to the urgency of the need for such vessels and to their usefulness for peacetime service. Of course, in view of the emergency conditions, early delivery of ships is deemed most essential and to a degree outweighs peace time competitive considerations.

PARTICULARS OF VESSEL DESIGNS

General.—The particulars of the designs of the long range type cargo ships, the C1's, C2's and C3's, have not changed except in minor details. Various changes in materials entering in the construction of the engines, boilers, condensers, etc., have been made to conserve the supply of certain vital defense metals. As previously noted, cast iron has been eliminated as far as practicable to forestall cracking under excessive vibration.

Alcoa Type.—These vessels were especially designed for the carriage of bauxite ore at a speed of 17 knots, with a normal shaft horsepower of 8500 developed by geared turbines. They are 420'-0" L.B.P., 62'-0" beam, 41'-6" depth to weather deck and 25'-0" draft. Accommodations are

provided for 40 passengers. The construction of these vessels is well under way, and delivery of the first vessel is expected early in 1942.

Exporter Class Cargo Vessels.—This type of vessel is smaller than the previous vessels designed for the trade route served by the American Export Lines, being 400'-0" L.B.P., 60'-0" beam, 39'-0" depth to weather deck. The vessels are turbine driven developing 7500 normal shaft horsepower which is expected to drive the vessel at a sustained sea speed of 16½ knots. The deadweight capacity is 8150 tons at a molded draft of 27'-7", with deep tanks in No. 4 hold for the carriage of cargo oils. There are no accommodations for passengers.

Seas Shipping Co. Vessels.—These vessels are of an intermediate size between the Maritime Commission's C2 and C3 type vessels. They are the shelter deck type, steam turbine driven, with a speed of 15½ knots at a normal shaft horsepower of 6300. Deadweight carrying capacity is about 10,000 tons at load draft of 27'-0" molded, and provision is made for about 11,500 cubic feet of cargo refrigeration. Accommodations are provided for 12 passengers. The vessel has a straight sheer which together with the exterior styling, gives the vessel a very pleasing appearance. The principal characteristics are: 450'-0" L.B.P., 66'-0" beam, and 43'-0" depth to weather deck.

Tankers.—The tankers designed for the Socony Vacuum Oil Co., building at Bethlehem-Sparrows Point Shipbuilding Corp., have a capacity of 133,000 barrels and a total deadweight capacity of 15,910 tons. The vessel will develop a sea speed of 16½ knots at 9600 H.P., with a single screw. The turbine installation is capable of developing a maximum of 12,000 shaft horsepower. One of these vessels has been delivered, and the delivery of the second is impending.

The tankers building for the Keystone Tankship Corporation at the Sun Shipbuilding & Dry Dock Co. have the same power and speed as those noted for the Socony Vacuum Oil Co. However, these vessels have a

slightly greater length with a corresponding deadweight of 16,400 tons. One of these vessels is scheduled for delivery this month (December).

The tankers building under the augmented tanker program have normal S.H.P. of 6000, developed by turbo-electric propelling plant driving the vessel at a speed of $14\frac{1}{2}$ knots. The total deadweight capacity is 16,460 tons at molded draft of $29'-11\frac{3}{8}"$. These vessels are built on the longitudinal framing system, with two longitudinal bulkheads, and are 503' L.B.P., 68' molded beam and $37'-3"$ molded depth.

S.S. African Comet.—This vessel is a modification of the C3 design to suit the passenger and cargo needs of the trade route serviced by the American South African Line. Accommodations are provided amidships for 115 passengers in 40 state-rooms all of which are outside rooms with adjoining private bath or shower. The vessel is of all-welded construction. The dry cargo holds are fitted with humidity and ventilation controls. Provision is also made for the carriage of refrigerated and liquid cargoes.

The C-type vessels in their inception were designed to be useful as naval auxiliaries in time of emergency. A considerable number of completed vessels of this type have been taken over by the Navy Department and in many instances have been adapted to naval service with but little alteration. In other instances, the Navy has acquired C-type vessels before completion and converted them to various types of naval auxiliaries. In still other instances, vessels of the C3 type intended for cargo vessels are being converted to airplane tenders, destroyer tenders, and army transports under the Maritime Commission's direction. The details of these conversions can not be given.

LIBERTY SHIPS

The emergency type cargo vessels have been designated as Liberty ships. They are designed primarily as deadweight carriers and are of the full scantling type. They are of simple

construction and for the most part welded. Propulsion machinery consists of one direct-acting condensing 3-cylinder triple-expansion engine developing 2500 I.H.P. at 76 R.P.M. Steam is supplied to the throttle valve at 200 pounds gauge and 440° F. total temperature. There are two water-tube boilers of the cross drum sectional header straight tube type equipped with superheaters and for burning Bunker C fuel oil under forced draft. The principal characteristics are $416'-0"$ L.B.P. \times $56'-10\frac{1}{4}"$ Beam \times $37'-4"$ depth to weather deck and full load draft of $27'-7\frac{7}{8}"$ molded.

The vessels being constructed for the British are in many respects the same as the vessels for the Liberty fleet. However, the British vessels are fitted with Scotch boilers for use of coal.

MISCELLANEOUS DESIGNS

Coasters.—Various miscellaneous vessels are being constructed, among which are included coasters, coastal tankers, harbor tugs, seagoing tugs, Great Lakes ore carriers and reinforced concrete oil barges. The coasters are of two types, one suitable for use in the British coastal trade, including Baltic Sea service. This design follows that of British vessels previously built for this service. The vessels are 250' L.B.P., $42'-1"$ beam molded and $20'-5"$ molded depth. They are powered by 3-cylinder triple-expansion engines of 1300 I.H.P.; steam is supplied by two coal-fired water tube boilers. The other type coaster is identical with the M.S. *Arthur Hoyt Scott*, designed by Thomas D. Bowes. This vessel is fitted with direct drive diesel equipped with supercharger of American design, capable of delivering 1300 B.H.P. The cargo handling gear consists of a diesel driven whirley of 16,000# capacity mounted on tracks enabling the whirley under its own power to handle cargo from any of the three holds and swing the load to shore. The principal characteristics are 255' L.B.P., $42'-6"$ molded beam and $25'-3"$ molded depth.

Coastal tankers also follow the de-

sign of British vessels operating in the coastal trade. They are built of steel of the single deck, full center expansion trunk type, with raked stem and cruiser stern. The principal characteristics are as follows: Length B.P. 212'-6", beam molded 37'-0", depth molded 14'-6", draft 12'-11½", S.H.P. 800 developed by a direct drive diesel engine.

Harbor tugs are all driven by direct drive diesels. The Commission had asked for bids on steam driven and diesel electric driven tugs but, as a result of negotiation, direct drive diesels were accepted. The make of diesel and power of same varied somewhat between concerns awarded contracts. The general characteristics are as follows: L.O.A. 100 ft., L.B.P. 88'-6", beam molded 25'-0", depth molded amidship 13'-6", S.H.P. 905 to 1050.

Seagoing tugs were designed and powered to meet the most exacting service at sea. They are powered with two direct reversible supercharged diesel engines driving through two electro-magnetic couplings and one two-pinion single reduction gear to a single propeller and Kort nozzle. These vessels will be steel single deck, deep sea tugs with continuous main deck, upper deck above main deck continuous from abaft amidships to the stem. Above the upper deck there will be a steel deck house and bridge deck, and above this a steel house and navigating bridge. The hull is designed to a two-compartment standard of subdivision for flooding and damage stability. The principal characteristics are as follows: L.O.A. 194'-9", L.B.P. 185'-0", breadth molded extreme 37'-6", depth molded 21'-5", draft designed 15'-6", S.H.P. 2250 with 110% overload. Speed 14 knots.

Ore Carriers.—To augment the ore fleet in the Great Lakes, the Commission has contracted for the building of 16 ore carriers which follow the conventional design of this type vessel. The principal characteristics are as follows: L.B.P. 595', beam 60', depth 35', draft 22', deadweight 12,000 tons, S.H.P. 2500, developed by steam reciprocating engines.

Coast Barges.—Due to the urgency of the need for hulls suitable for carriage of petroleum products and the apparent shortage of shipbuilding steel plates, the Commission after careful consideration authorized the construction of reinforced concrete barges for coastwise service. The Commission set the design standards to be used, and the various contractors developed the design therefrom. The barges will be manned and will comply fully with the Rules for Tank Vessels and also with the Load Line Regulations. The principal characteristics are approximately as follows: L.O.A. 360', beam 54', depth 36', draft 28'-6", deadweight 6,600 tons.

PROPULSION

General.—As already noted, the war emergency has influenced the type of main propulsion used, due to the heavy drain on the gear cutting industry. The expanded tanker program has changed from turbine drive through reduction gears to turbo-electric drive. Also, recourse to steam reciprocating engines has been made in the case of the Liberty type ships, ore fleet, and coasters.

The Rio Hudson and sister ships, building at the Sun Shipbuilding and Dry Dock Co., have a machinery installation of type never before utilized in any ship. They are powered with two Doxford-type diesels driving a single propeller through Westinghouse electric slip couplings and single reduction gear of the two-pinion type. The engines are of the opposed piston, welded frame type specially designed to operate at 180 R.P.M. They have six cylinders each with 21" diameter and combined piston stroke of 60". Each is rated at 4500 S.H.P. at 180 R.P.M. and is specified to take a 25% overload at 195 R.P.M. Scavenging air is supplied to the propelling engines by two electrically driven rotary blowers provided with engine room silencers and installed in the main propelling machinery compartment. These vessels are being converted to naval use, and their performance will be followed with interest.

S.S. Examiner.—The high pressure

reheat cycle steam installation on the *S.S. Examiner* has been completed and tests made which were highly successful. The principal characteristics of the design are as follows: L.B.P. 450'; beam molded 66'; draft molded 27'-8"; S.H.P. normal 8000; speed 16.5 knots. The main propulsion turbines consist of three casings in series. The high pressure turbine is all impulse, consisting of six stages, and receives steam at 1200# G and 750° F. It is very small and runs at high speed to keep down rotational losses and reduce problems associated with high pressure to a minimum. The steam exhausts from the high pressure turbine into the boiler where it is reheated to 750° F. before it enters the intermediate turbine. The intermediate pressure turbine is one stage impulse and 20 stages reaction. The design of this turbine permits it to take large fluctuations of steam temperature without excessive distortion. The reheater outlet temperatures are variable at will and may change rapidly under some conditions of operation. The low pressure turbine is all reaction and receives steam direct from the I. P. turbine. The astern turbine consists of two impulse stages and follows the conventional practice for geared turbine installations except that there is one more moving row in the first stage to utilize the high initial pressure.

Two boilers are provided, each containing two separately fired furnaces. The oil burners in one furnace supply the heat for the reheater and the primary superheater; the burners in the other furnace control the boiler pressure and supply the heat for the secondary superheater. The reheater and the primary and secondary superheaters function as convection units and are protected from the radiant heat of the furnaces by water-cooled screen tubes. The steam passes from the steam drum through external connecting pipes to the primary superheater, to the secondary superheater, and then to the main steam line. Steam from the high pressure turbine passes through the reheater then to the intermediate pressure turbine.

The two main feed pumps are of unique design, being of a variable stroke, triplex-plunger type motor driven. Both units are required for full power operations, and each pump is capable of operating the plant at about two-thirds of normal feed requirements. When getting under way and during maneuvering the turbines are operated without reheat. The reheater section of the boiler is put into service after quarter power is reached and steady operation or increased power is expected. When a sudden stop is made at sea, the reheater fires will be automatically cut out instantly when the power drops below 20 per cent of full power. Provision is made to run the ship with both boilers and both reheaters in operation, or with two boilers and one reheater, or with one boiler and one reheater.

The reduction gears are of the double-reduction, double-helical articulated type. There are two high-speed gears each of which drives a low-speed pinion through a quill shaft with flexible couplings at each end, the quill shaft passing through the hollow pinion. The two low-speed pinions mesh with the main gear, the high-pressure turbine pinion and intermediate turbine pinion mesh with one of the high-speed gears, and the low-pressure pinion meshes with the other high-speed gear. Each of the rotating elements is carried on two bearings.

The proposed Pacific liners, referred to in *THE AMERICAN YEAR BOOK*, 1940, to be powered by the high-pressure reheat cycle type of machinery, are not to be built. Contracts for the construction of these vessels were not placed because of developments in the technical aspects of naval aviation as interpreted at the time.

TRAINING OF PERSONNEL

The training of competent personnel to handle the enormous building programs for both naval and merchant ships has been and is a staggering problem. The U.S. Office of Education aids the various shipyards and engineering firms through a country-wide program of education and train-

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ing in engineering fields and with skilled worker field.

In respect to the engineering fields, engineering defense training courses have been opened to qualified men to fit them for jobs in all lines of engineering. Thus a young man trained in, say, civil engineering, can receive a 15 weeks' intensive course on ship construction and design, which makes him more useful and capable of handling ship problems. This training is usually in-service training. Shipyards also offer evening classes to enable employees to qualify for technical positions or better the technical positions held.

The providing of skilled workers in sufficient numbers to meet the rapid expansion of shipbuilding is still a big task. It has been found that the best and quickest results are obtained by training workers to develop skill in special phases of a trade. This training is provided partly through training centers set up by the U.S. Office of Education and partly by the training courses furnished by the shipyards themselves. Training is given at periods when machines and the necessary equipment are not being used for production work. When trainees who have been carefully selected have sufficient experience in machine operation, bench or floor assembly for the type of work in which they are being trained to be able to work without intensive and constant supervision, they are transferred to regular shift production work. It is usually found that, within a very few months, work produced by men trained along specialized lines compares favorably in quality and quantity with the work produced by fully qualified workers in the trades.

TRENDS

The present emergency has fully demonstrated the wisdom of designing merchant ships with emphasis on their

utility as naval auxiliaries. The C-3 type especially has been found admirably suited for conversion to such varied military uses as tenders for sea-planes or destroyers, troop transports, escort plane carriers, and supply ships. Although these vessels and the other C-type vessels have features incorporated therein to facilitate their use as naval units, every effort is made to construct and arrange the vessels for the most efficient service as merchant ships. It is conceivable that the above favorable results may emphasize the trend toward this type of standardized construction.

The cost of shipbuilding is still rising due to the accelerated pace of building and difficulty in securing material as well as to increased labor costs. Every effort is being made to control this tendency and also to prevent the building of additional shipyards which would cause dilution of technical staffs and supervisory employees.

To meet competitive trade after the present war is already a matter of study. Greater speed and more refinement in passenger comfort may be expected. The accent will be on providing passengers with the same comforts as may be expected in a good hotel ashore.

In high power machinery the trend is just now toward the reheat cycle and more general use of large evaporating plants for fresh water. The decrease in weight of machinery per horsepower, elimination of large quantities of fresh water in the double bottoms, extensive use of welding and large passenger spaces on top sides all tend to complicate the problem of stability in damaged condition.

There is a tendency to swing toward turbo-electric machinery because of its flexibility and availability.

The effort to avoid "bottlenecks" in material supply by the use of acceptable substitutes is pronounced.

COGNATE SOCIETIES AND RESEARCH INSTITUTIONS

PERIODICAL PUBLICATIONS

<i>Civil Engineering</i> 29 West 39th Street, New York City.	<i>Motor</i> 572 Madison Ave., New York City.
<i>Construction Digest</i> 215 East New York Street, Indianapolis, Ind.	<i>National Engineer</i> 176 West Adams Street, Chicago.
<i>Construction Methods and Equipment</i> 330 West 42nd Street, New York City.	<i>Popular Mechanics Magazine</i> 200 East Ontario Street, Chicago.
<i>Contractors and Engineers Monthly</i> 470 Fourth Ave., New York City.	<i>Popular Science Monthly</i> 353 Fourth Ave., New York City.
<i>Diesel Power</i> 192 Lexington Ave., New York City.	<i>Power Plant Engineering</i> 53 West Jackson Boulevard, Chicago.
<i>Electrical Communication</i> 67 Broad Street, New York City.	<i>Professional Engineer</i> 8 South Michigan Ave., Chicago.
<i>Electrical Engineering</i> 29 West 39th Street, New York City.	<i>Radio Communications</i> 19 East 47th Street, New York City.
<i>Electrical World</i> 330 West 42nd Street, New York City.	<i>Radio Guide</i> 551 Fifth Ave., New York City.
<i>Electronics</i> 330 West 42nd Street, New York City.	<i>Radio-Television Journal and Talking Machine World</i> 1270 Sixth Ave., New York City.
<i>Engineering and Mining Journal</i> 330 West 42nd Street, New York City.	<i>Radio World</i> 145 West 45th Street, New York City.
<i>Engineering News-Record</i> 330 West 42nd Street, New York City.	<i>Railway Mechanical Engineer</i> 30 Church Street, New York City.
<i>General Electric Review</i> General Electric Company, Schenectady, N.Y.	<i>S.A.E. (Journal of the Society of Automotive Engineers)</i> 29 West 39th Street, New York City.
<i>Journal of Engineering Education</i> University of Pittsburgh, Pittsburgh, Pa.	<i>Sibley Journal of Engineering</i> Cornell University, Ithaca, N.Y.
<i>Mechanical Engineering</i> 29 West 39th Street, New York City.	<i>Tech Engineering News</i> Massachusetts Institute of Technology, Cambridge, Mass.
	<i>Technology Review</i> Massachusetts Institute of Technology, Cambridge, Mass.
	<i>Universal Engineer</i> 150 Nassau Street, New York City.

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(For further information, the reader may address the following organizations)

ALLIED BUILDING METAL INDUSTRIES, 101 Park Ave., New York City.	AMERICAN CERAMIC SOCIETY, 2525 N. High St., Columbus, Ohio
AMERICAN ASSOCIATION OF ENGINEERS, 8 S. Michigan Blvd., Chicago, Ill.	AMERICAN CONCRETE INSTITUTE, 7400 Second Blvd., Detroit, Mich.

XIX. ENGINEERING AND CONSTRUCTION

- AMERICAN CONSTRUCTION COUNCIL, 28 W. 44th St., New York City.
- AMERICAN ENGINEERING COUNCIL, 744 Jackson Pl., Washington, D.C.
- AMERICAN FOUNDRYMEN'S ASSN., 222 W. Adams St., Chicago, Ill.
- AMERICAN INSTITUTE OF CHEMICAL ENGINEERS, Bellevue Court Bldg., Philadelphia, Pa.
- AMERICAN INSTITUTE OF CONSULTING ENGINEERS, 33 W. 39th St., New York City.
- AMERICAN INSTITUTE OF ELECTRICAL ENGINEERS, 29 West 39th Street, New York City.
- AMERICAN INSTITUTE OF MINING AND METALLURGICAL ENGINEERS, 29 W. 39th St., New York City.
- AMERICAN IRON AND STEEL INSTITUTE, 350 Fifth Ave., New York City.
- AMERICAN PETROLEUM INSTITUTE, 50 W. 50th St., New York City.
- AMERICAN RADIO RELAY LEAGUE, 38 La Salle Road, West Hartford, Conn.
- AMERICAN RAILWAY ENGINEERING ASSN., 59 E. Van Buren St., Chicago, Ill.
- AMERICAN ROAD BUILDERS ASSN., National Press Bldg., Washington, D.C.
- AMERICAN SOCIETY OF CIVIL ENGINEERS, 33 W. 39th St., New York City.
- AMERICAN SOCIETY OF HEATING AND VENTILATING ENGINEERS, 51 Madison Ave., New York City.
- AMERICAN SOCIETY OF MECHANICAL ENGINEERS, 29 W. 39th St., New York City.
- AMERICAN SOCIETY OF METALS, 7016 Euclid Ave., Cleveland, Ohio.
- AMERICAN SOCIETY OF MUNICIPAL ENGINEERS, 4359 Lindell Bldg., St. Louis, Mo.
- AMERICAN SOCIETY OF NAVAL ENGINEERS, Navy Department, Washington, D.C.
- AMERICAN SOCIETY OF REFRIGERATING ENGINEERS, 37 W. 39th St., New York City.
- AMERICAN SOCIETY OF SAFETY ENGINEERS, 25 W. 39th St., New York City.
- AMERICAN SOCIETY FOR STEEL TREATING, 7015 Euclid Ave., Cleveland, O.
- AMERICAN SOCIETY FOR TESTING MATERIALS, 260 S. Broad St., Philadelphia, Pa.
- AMERICAN STANDARDS ASSN., 29 W. 39th St., New York City.
- AMERICAN STATISTICAL ASSN., 210 Normandy Bldg., Washington, D.C.
- AMERICAN WATER WORKS ASSN., 22 E. 40th St., New York City.
- AMERICAN WELDING SOCIETY, 29 West 39th Street, New York City.
- HIGHWAY RESEARCH BOARD OF THE NATIONAL RESEARCH COUNCIL, 2101 Constitution Ave., N. W., Washington, D.C.
- ILLUMINATING ENGINEERING SOCIETY, 51 Madison Ave., New York City.
- INSTITUTE OF THE AERONAUTICAL SCIENCES, INC., 30 Rockefeller Plaza, New York City.
- INSTITUTE OF RADIO ENGINEERS, INC., 330 W. 42nd St., New York City.
- NATIONAL AERONAUTIC ASSN., Dupont Circle, Washington, D.C.
- NATIONAL BOARD OF FIRE UNDERWRITERS, 85 John St., New York City.
- NATIONAL FIRE PROTECTION ASSN., 60 Battery March St., Boston, Mass.
- NATIONAL RESEARCH COUNCIL, 2101 Constitution Ave., Washington, D.C.
- NATIONAL SLATE ASSN., 644 Drexel Bldg., Philadelphia, Pa.
- NEW YORK ELECTRICAL SOCIETY, 29 W. 39th St., New York City.
- RADIO CLUB OF AMERICA, 11 W. 42nd St., New York City.
- RADIO MANUFACTURERS ASSOCIATION, 1317 F St., N.W., Washington, D.C.
- SOCIETY OF AUTOMOTIVE ENGINEERS, INC., 29 W. 39th St., New York City.
- SOCIETY OF NAVAL ARCHITECTS AND MARINE ENGINEERS, 29 W. 39th St., New York City.
- SOCIETY FOR PROMOTION OF ENGINEERING EDUCATION, Univ. of Pittsburgh, Pittsburgh, Pa.
- THE ENGINEERING FOUNDATION, 29 W. 39th St., New York City.
- THE SOCIETY OF MOTION PICTURE ENGINEERS INC., Hotel Pennsylvania, New York City.
- WESTERN SOCIETY OF ENGINEERS, 205 Wacker Drive, Chicago, Ill.

DIVISION XX
GEOPHYSICAL SCIENCES
EARTHQUAKES AND VOLCANOES

By N. H. HECK
UNITED STATES COAST AND GEODETIC SURVEY

**EARTHQUAKES IN FOREIGN
AREAS**

Though many customary reports are missing it can be stated that there were no major earthquakes during the 12 months ended Nov. 30, 1941, in the sense of great destruction. There were 10 shocks in which loss of life or property, or both, were reported. Of these the most important included: March 1, northern Greece, with severe damage at Larissa; April 15, Colima, Mexico, with damage at Mexico City; April 20, Pamir Mountains, Afghanistan; July 16, Nagano Prefecture, Japan; Sept. 11, Van, eastern Turkey. There were 43 earthquakes strong enough to be widely recorded, many of which were submarine. One of the later was the strongest of the year, that of Nov. 25, north of the Madeira Islands. Most of these earthquakes occurred in known earthquake belts, but that on Aug. 15, near the Cape Verde Islands, was in an unusual locality.

**EARTHQUAKES IN THE UNITED
STATES, ALASKA, AND HAWAII**

There were no important earthquakes during the year but there were about 10 that were moderately destructive. On Dec. 20 and 24, 1940, there were two shocks in the vicinity of Ossipee, N. H. In California there were shocks on Dec. 20, 1940, and Sept. 18, 1941, in the Cape Mendocino region; on June 30, submarine off Santa Barbara; on Sept. 14 in Owens

Valley; and Oct. 21 and 22 and Nov. 14 in the vicinity of Los Angeles.

In Alaska there were no important earthquakes, though there were several severe submarine shocks off the Aleutian Islands and the Alaska Peninsula.

There was a submarine shock of considerable intensity off Hawaii on Sept. 25.

SEISMOLOGICAL STATIONS

In order that earthquakes may be related to geological structure, accurate location, both in geographical position and depth, is necessary. The contribution of the United States to such location is represented by 53 active seismological stations, equipped with instruments for recording near or distant earthquakes or both. There are a number of inactive stations which may resume activity. Several new stations are expected to be in operation in 1942, and one new station has been put in operation in the Lake Mead region.

These stations are operated by the National Government, either directly or cooperatively, by educational and scientific institutions, and by individuals. In order to make the stations and their results more effective, several groups have been organized, including the Jesuit Seismological Association, with headquarters at St. Louis, Missouri; the Northeastern Seismological Association, centering at Weston, Mass.; and two California groups based respectively on the

Seismological Laboratory of the California Institute of Technology at Pasadena and on the University of California at Berkeley.

In addition there are two stations in Alaska, one in Hawaii (in addition to a number for recording volcanic shocks), one in Puerto Rico, and one in the Canal Zone. Two stations in South America are operated by scientific organizations in the United States—Huancaayo, Peru (Carnegie Institution of Washington) and Montezuma, Chile (Smithsonian Institution). With some cooperation from the United States, records and their interpretation have become available from Bermuda and Jamaica. Special arrangements have made possible the continued operation of stations at Ivigtut and Scoresbysund, Greenland. On the return of the United States Antarctic Expedition it was found that it had been able to operate a seismograph for six weeks in 1940 at the Rockefeller Mountains, 100 miles from Little America, the furthest south station ever installed.

EARTHQUAKE LOCATION

Through the cooperation of many of these stations, even though former cooperation of certain foreign stations have been stopped by the war, immediate telegraphic reports are made to Washington and St. Louis. The Coast and Geodetic Survey, the Jesuit Seismological Association, and Science Service were thereby enabled to locate and announce very quickly the location of earthquakes in the Western Hemisphere and, less accurately, in the Eastern Hemisphere. An average of $3\frac{1}{2}$ earthquakes per month were located in this way. The five organized groups that have been mentioned, later make precise location of many earthquakes. This location is aided through exchange of information with Canada, Mexico, Guatemala, and El Salvador.

OBSERVATIONS IN CENTRAL REGIONS OF STRONG EARTHQUAKES

All the stations mentioned operate continuously. In addition, there have

been in operation strong-motion seismographs which operate only when set in motion by destructive ground movements and which have been installed by or in cooperation with the Coast and Geodetic Survey. There are 51 of these in California, four each in Nevada and Montana, and one each in Utah and the Canal Zone. The information obtained is of engineering, seismological, and geological significance. Records were obtained from 16 earthquakes during the year, all in California and Nevada. The most useful record obtained was that of the Santa Barbara earthquake of June 30, 1941. The analysis of the records of the Imperial Valley earthquake of May 18, 1940, have afforded new and useful information about earthquake motions near a fault where surface slipping occurred.

In order to have a complete account of every earthquake, instrumental determinations must be supplemented by reports of observers. In parts of the United States where earthquakes are infrequent, questionnaires are furnished to selected observers immediately after an earthquake. The observers of the Weather Bureau report on earthquake activity. In New England and the Mississippi Valley, the organized groups centering in Massachusetts and Missouri secure such information. In the western Mountain and Pacific Coast regions, there is a joint arrangement between the Coast and Geodetic Survey and designated state representatives, with cooperation from various government and public service organizations. In Alaska the University of Alaska cooperates.

Engineering studies are made of these and other observations by various organizations, including the government, California Institute of Technology, Stanford University, and structural engineering and architectural groups in California. In all government construction activities in regions subject to earthquake, the need for proper design and construction to resist earthquake is taken into account. Various organizations have continued work on earthquake building codes.

ECONOMIC GEOLOGY

NEW DEVELOPMENTS

Special attention has been given to the design of new vertical seismometers and the improvement of previous instruments of this type. Seismicity of the earth has been appraised on the basis of instrumental observations for the first time.

RELATED MEASUREMENTS

Earthquakes are related to crustal movements whether they are sudden movements at the time of the earthquake or slow movements at other times. Such movements were studied during the year by the Coast and Geodetic Survey by means of geodetic triangulation and leveling in the Lake Mead region and California. Determination of tilting of the crust has been made at Berkeley, Calif. Other measurements associated with earthquakes in relation to engineering problems have included determinations of periods of buildings.

SEISMOLOGICAL ORGANIZATIONS AND PUBLICATIONS

In addition to the organizations that have been mentioned, the Seismological Society of America and its Eastern Section, and the Section of Seismology of the American Geophysical Union, view the subject from a national viewpoint. The latter is the American branch of the Association of Seis-

mology of the International Union of Geodesy and Geophysics. This Association functioned to some degree during the year though greatly handicapped. The American branch of its Commission which deals with tidal, or seismic sea waves and storm waves, has been functioning. The work on the *International Seismological Summary*, the list of earthquakes of the entire earth, has continued at Oxford University.

Publication of instrumental data and interpretations by the various organizations was in mimeographed form. That of earthquake description was in both mimeographed and printed form. The annual published list of earthquakes is issued by the Coast and Geodetic Survey.

VOLCANOES

Little volcanic activity was reported during the year and none of importance. It has been stated that the Mexican earthquake of April 15, was accompanied by an eruption of the volcano De Colima, which set forest fires. The usual seismograph, tilt and other observations were made in Hawaii. Presumably the Volcanological Observatory of the Netherlands East Indies continued its observations. The Earthquake Research Institute of Japan made a geophysical investigation in the vicinity of the volcano on Myaki which erupted in July, 1940.

ECONOMIC GEOLOGY

By CHARLES H. BEHRE, JR.

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THE WAR EMPHASIS

In 1941 the emphasis of almost all the applied work in economic geology in the United States was directed toward the war effort. This shift in emphasis from a peace-time setting to one of war is recognizable in the literature, but far more yet in the activities of scientific and technical workers throughout the country.

Already in December, 1939, the Geological Society of America had

sponsored a discussion of mineral resources and their effect on peace and war. Similar discussions were held by the American Institute of Mining Engineers, Society of Economic Geologists, and American Association of Scientific Workers. Meanwhile, the staffs of the U.S. Geological Survey and U.S. Bureau of Mines were faced with the problem of estimating the reserves of those mineral raw materials needed for military purposes;

and the Office of Production Management was forced to undertake an evaluation of priority claims in face of a phenomenally increased demand and an obviously limited supply. Research work by the two permanent bureaus was therefore initiated for the dual purpose (1) of measuring the reserves available and (2) of finding new deposits. The results, while suffering somewhat still from lack of correlation, are at least taking shape steadily. In short, the emphasis in 1941, as in 1940, was upon the national and international aspects of mineral economics, but at a greatly increased pace.

It is heartening to observe that, despite the necessary diversion of scientific activity to preparation for war, some investigators still can and do devote time to theoretical studies, many of which in the long run prove of great practical importance, though not originally undertaken with that expectation.

INVESTIGATIONS OF MINERAL RESERVES

The Federal Government has naturally taken the lead in studying the mineral raw materials in territory controlled by the United States, as evidenced by recent publications of the U.S. Geological Survey. Illustrations are: *Bulletins 922-Q* and *S*, on tungsten in parts of California, by D. M. Lemmon; *922-R*, on quicksilver in parts of California, by Eckel, Yates; and Granger; *922-T*, on tin pegmatites in parts of the Black Hills, by Smith and Page; *931-A*, on tungsten in Lemhi County, Idaho, by Callaghan and Lemmon; and *931-B*, on quicksilver in parts of Nevada, California, and Oregon, by C. P. Ross.

As might be anticipated, those minerals of which there is a special shortage, have received the chief attention, but an article by Frasc  mentions important reserves of iron ore in Surigao Province, Mindanao, P. I. Debate upon the question of petroleum reserves was also sharpened by governmental measures instituted in the early fall and intended to restrict gasoline consumption.

The importance of Latin America as a mineral source continued to be underscored. Numerous technical missions, including mining geologists, set sail for Chile, the Guianas, Bolivia, and Peru. Many of these investigations were carried on by the United States Geological Survey, acting co-operatively with the Federal survey of the Latin American state concerned. Brazil in particular has attracted special attention. Its area is vast and its climate has been favorable to the production of residual concentrates, such as bauxite, manganese oxides, and eluvial and alluvial placers. Preliminary findings are highly encouraging, especially for manganese in western Brazil. Meantime the Brazilian Government is said to be furthering an extensive iron smelting industry and a corresponding growth of steel-making capacity.

Most significant is the somewhat surprising awakening of the American public to the importance of mineral raw materials in terms of national defense. In the past two years, public awareness rose abruptly. The sudden outbreak of the Japanese War, though not generally unexpected, focussed the attention of Americans upon a condition that should not have been a great surprise to those who had already accepted the economic interpretation of contemporary events in the Pacific.

STUDIES OF PETROLEUM DEPOSITS

The July issue of the *Bulletin of the American Association of Petroleum Geologists* was devoted to a discussion of the r le of petroleum geology in defense, to a consideration of the future of geophysics as applied to petroleum exploration, and to certain aspects of the relation between industry and government. Similarly, an excellent summary of future oil provinces of the United States and Canada was published in the August issue of the same journal, and a valuable discussion by W. H. Voskuil on the flow of oil from producing districts to world consumers appeared in the March issue.

Larger regional studies of special value to petroleum geologists include recently published articles on southern Oklahoma (Packard, *Am. Ass. Pet. Geol., Bull.*, 25, pp. 1-22), on the central basin of the Appalachian geosyncline (Lafferty, op. cit., 25, pp. 781-825), on the stratigraphy of the Mid-Continent province (Dott, op. cit., 25, pp. 1619-1705), and on the Wind River Mountains (Branson and Branson, op. cit., 25, pp. 120-151). More detailed descriptions of possible or proven oil fields included descriptions in Volume 25 of the *Bulletin of the American Association of Petroleum Geologists* of five Texas fields and one in Louisiana, thus affording an index as to the regions of expansion today. *Bulletin 921-B* of the U. S. Geological Survey describes the geology south of Cody, Wyo.

Among contributions of conspicuous theoretical interest were articles dealing with the effect of cements in sandstones upon the migration of oil (Waldschmidt, *Am. Ass. Pet. Geol., Bull.*, 25, pp. 1839-1879) and with the sediments of fresh water lakes (Twenhofel and McKelvey, op. cit., pp. 826-849).

In general during the past year, petroleum geologists consolidated their knowledge of American fields but made less than the usual contributions to the theory of their subject. This reflects the emphasis on production resulting from the war.

INVESTIGATIONS IN THE INDUSTRIAL MINERALS

Since chief interest in the industrial minerals centers upon their extraction and preparation for the market, the research dealing with them, as illustrated by articles in this year's issues of *Mining Technology* (*Amer. Inst. Min. Met. Eng.*), approaches the technologic fields of mining and milling. Outstanding papers in this border field are "Prospecting, Developing, and Mining Semiplastic Fire Clay in Missouri" by Bradley and Miller (*Mining Technology*, July, 1941) and "Mining and Preparation of Florida Hard-Rock Phosphate" by D. B. Kibler, Jr. (*Min. Techn.*, March, 1941).

Among other published research dealing with gems, Pearl has described the Tourquoise deposits of Colorado (*Econ. Geol.*, 36, pp. 335-344) and Kraus and Slawson discussed the cutting of diamonds for industrial purposes (*Amer. Mineral.*, 26, pp. 153-160). Bosazza described some of the South African fire clays, with special reference to their kaolin minerals (*Amer. Mineral.*, 26, pp. 290-292), and the closing section of a careful study of the hydrothermally formed clay minerals was published by Norton (*Amer. Mineral.*, 26, pp. 1-17). Lang recently directed attention to possible large reserves of sodium sulphate in the form of brines in the permian rocks of Trans-Pecos Texas (*Amer. Assn. Petrol. Geol., Bull.* 25, pp. 152-160). There has also been much study of phosphate reserves, begun in 1939 by various state and Federal agencies.

THEORIES BEARING UPON ORE DEPOSITION

Regarding theories of ore deposition, the most provocative question seems to have been that of the cause for regular mineral sequence in ores, discussed by Gallagher (*Econ. Geol.*, 36, pp. 95-99), Brown (op. cit., p. 100), Bruce (op. cit., pp. 455-458), and Wisser (op. cit., pp. 658-662). These comments arose from the stimulating discussion by Gallagher published in 1940. The consensus appears to be that a constant succession is usually observed but its cause is still enigmatic beyond the suggestions published several years ago by Butler and Burbank, Gilbert, and others.

The question of "vein dikes" has been raised, this time by Farmin (*Econ. Geol.*, 36, pp. 143-174) in discussing the gold-quartz veins of California. Newhouse sought to determine the direction of flow of ore solutions by the forms of crystals (op. cit., pp. 612-629). The nature of the ore solutions depositing tungsten ores in the Colorado Front Range was shown by Lovering to be initially acid, later alkaline (op. cit., pp. 229-279). Geochemical studies of ore deposition, stimulated by the National Research Council, bore first fruits in the ar-

ticle by Garrels (op. cit., pp. 729-744), who showed that lead is "zoned" more distantly than zinc because held in acid solutions as part of a complex ion.

The importance of igneous, especially monzonitic, intrusions is emphasized in the presidential address of Loughlin before the Society of Economic Geologists (*Econ. Geol.*, 36, pp. 671-697). McKinstry (*Trans., Am. Inst. Min. Eng.*, 144, pp. 65-87), presented a pointed discussion of structural control in veins, citing examples little known to American geologists.

The origin of the banded sedimentary iron ores was attributed by Woolnough (*Econ. Geol.*, 36, pp. 465-489) to epicontinental deposition, while Dunn assigns the banding in the iron ores of India to replacement, partly by magmatic waters, of thinly bedded tuffs (*Econ. Geol.*, 36, pp. 355-370).

A report by Bayley (U. S. Geol. Survey, *Bulletin*, 920) described magnetite ores, serpentine, and other Precambrian mineral deposits south of Delaware Water Gap.

STUDIES OF COAL AND OF GROUND WATER

The coal deposits of this country received little attention from geologists during the year. However, valuable texts on the geology of coal by A. C. Née (posthumously published) and by E. S. Moore appeared late in 1940. Regional groundwater studies were continued by the U. S. Geological Survey (see Stringfield and Cooper on artesian water in the Atlantic Coastal Plain of Georgia and Florida: (*Econ. Geol.*, 36, pp. 698-711). The discussion of the movement in aquifers was continued from 1940.

ECONOMIC GEOGRAPHY

BY SAMUEL N. DICKEN

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THE WORLD CRISIS AND PRODUCTION PROBLEMS

The stirring events of 1941 have brought the facts of economic geography to a wider public attention. With a large part of the world's people struggling for *lebensraum* (meaningly rendered as "production space"), the others are concerned lest their own resources be restricted or lost. Reflecting the increased interest in economic geography, newspapers and magazines give more space to the products of distant lands and to the background and circumstances of production. Of special interest are the products needed in wartime, since few nations can but feel the possibility of involvement in the present conflict.

The geography of production, or economic geography, has always been in a state of change as new techniques are developed and new demands created by shifting of human wants. Usually such changes are slow and orderly but today the rate of change is accelerated by the war. Production has

been influenced by the war in a number of ways and in various degrees in different countries, but no important part of the earth has remained unaffected. The partial blockade of numerous European countries has cut off many kinds of bulky goods. Movements of grain, cotton, wool, fruit, sugar, rubber, and petroleum have been restricted with serious affects in the producing as well as in the consuming countries. The scarcity of shipping, as well as the re-orientation of routes, has had almost the effect of a blockade on some countries remote from the war in Europe or Asia. Again, the demands of a world at war, or preparing for war, are different from those of a world at peace. Requirements of metals, petroleum, and chemicals have greatly increased. Much emphasis is now placed on the increased production of "strategic" materials, those used in warfare and at the same time scarce or difficult to obtain.

It is much too early to discern the

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total effect of the war on production but many of the workers in the field of economic geography are beginning to attack the problem. The techniques are at hand, for it has always been the concern of geographers to make studies of production in some detail, noting the trends in production by means of statistics and field work. But recent statistics are lacking for many countries, field work in some localities is impossible, and publication often delayed. Nevertheless, in contrast to 1940 when nearly all of the publications were concerned with peace-time problems, economic geography for 1941 turned a large share of its attention to the production problems of the war period.

PRODUCTION TRENDS IN THE UNITED STATES

Studies in the recent trends of production, especially as they are related to defense, are being made by various departments of the United States Government. The United States Tariff Commission (in "War and Its Effect on United States Imports," Dec. 1940) made a comprehensive study of the trends of production in the world. This was followed by more detailed studies of specific regions ("Latin America as a Source of Strategic and Other Essential Materials," Aug. 1941, and "United States Imports from Japan and Their Relation to the Defense Program and to the Economy of the Country," Sept. 1941). The newly created Office of the Co-ordinator of Information has a division dealing with Economic Geography, testimony not only of the importance of the changes in production but also of the necessity of coordinating the various agencies working on the subject. Periodical publications of various departments such as the *Commerce Monthly* (Department of Commerce), and *Foreign Agriculture* (Department of Agriculture) contributed much toward the changing picture of production. Many of the papers have to do with the effect of the war on production in the United States, now and after the war (L. A. Wheeler, "World War, Hemisphere Trade, and the

American Farmer," *For. Agric.*, Jan., 1941, 3-12). Although the picture is not clear for even a year in advance, it is probable that the United States will face declining exports of cotton, wheat, and tobacco and that other adjustments will have to be made as a result of our Good Neighbor policy and in the difficult conditions of a post-war world.

As in the past, many of the studies by individual geographers deal with a single commodity but in many cases with "strategic" ones. The scarcity of manganese and its importance to the steel industry (Warren Strain, "Manganese: A Vital Raw Material," *Jour. of Geogr.*, Sept. 1941, 201-211) has led the United States to encourage new imports from Cuba and Brazil and to consider building concentrating plants in order to utilize low grade local deposits. Recently there has been more anxiety over the transportation of petroleum than its production but there is very little development of new fields at the present time in the United States. John W. Frey ("Petroleum Utilization in Peacetime and Wartime," *Ann. Assoc. Am. Geogr.*, June, 1941, 113-118) summarizes the situation for the world but with special reference to the United States.

Many commodity studies, however, bear no direct relation to defense. The phenomenal increase in flax production (G. H. Primmer, "U. S. Flax Production," *Econ. Geogr.*, Jan., 1941, 25-30) is related in part to the development of wilt-resisting varieties. Also, new methods of processing linseed oil and other vegetable oils may lead to the further replacement of tung oil which, despite the infant home industry in Texas and Florida, is very scarce and costly. The soybean shows a steady increase (G. F. Deasy, "Geography of the U. S. Soybean Industry," *Jour. of Geogr.*, Jan. 1941, 1-7) and, in spite of competition from various products, continues to find new uses.

LATIN AMERICA

From the point of view of the United States the greatest interest in Latin America has been with respect

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to certain strategic materials and a number of studies have been made by various agencies. There is special interest in cacao beans, bauxite, copper, mercury, nitrate, rubber, and tin. A special report by the American Geographical Society (Raye R. Platt, *et al*, "The European Possessions in the Caribbean Area," 1941) deals with the population, industry, and trade of the various European colonies in Latin America. The increasing interest of teachers in Latin America is expressed in G. J. Miller ("Some Problems in Western Hemisphere Solidarity," *Jour. of Geogr.*, Mar. 1941), and in F. A. Carlson ("Geography in Inter-American Cooperation," *Jour. of Geogr.*, May 1941, 161-168).

Aside from wartime points of view there is a sustained interest in the people of Latin America (Charles A. Gauld, "Brazil Takes a Census," *Jour. of Geogr.*, Apr. 1941) and in their agriculture (P. E. James, "The Process of Pastoral and Agricultural Settlement on the Argentine Humid Pampa," *Jour. of Geogr.*, Apr. 1941, and Irwin P. Keeler and R. F. Lankenau, "Agriculture in the Sao-Paulo-north Parana Region," *For. Agric.*, July, 1941, 263-279). Outstanding problems in Latin American agriculture are the surpluses of corn, meat, wheat, and coffee (J. Bernard Gibbs, "The Inter-American Coffee Agreement," *For. Agric.*, Apr. 1941, 165-171) and the desire of the United States for strategic materials such as tin, manganese, copper, bauxite, and rubber.

EUROPE

Production in Europe, torn by war in recent years from Spain to central Russia, has been profoundly changed, but careful detailed studies of the changes are slow to appear. Some of the studies appearing in 1941 took no heed of the war (A. E. Owen, "Agricultural Divisions of Wales," *Geogr.*, June 1941, 69-76), others are only partly concerned (David G. Basile, "Agricultural Sicily," *Econ. Geogr.*, April 1941, 109-120). It is indicated that the agriculture of Europe, although modified temporarily by the

war, will probably return to approximately the former state if the lessons of the first World War hold true. But there are significant trends, none the less, such as the increasing dependence of Europe on outside grain even before the war began and the failure of Russia to develop a large export surplus (Lazar Volin, "Grain Exports from the Soviet Union," *For. Agric.*, May 1941, 205-214). Of the tremendous changes in the industries of Europe there are, as yet, few detailed studies.

ASIA

Next to Europe, Asia has been influenced most profoundly by the war. Especially significant have been the changes in China, where war and migrations are accompanied by the appearance of more than 2,000 new co-operative manufacturing societies (P. M. Roxby, "The Changing Structure of Chinese Society," *Geogr.*, June 1941, 53-61). Obviously the new China will have a very different production setup, whatever the outcome of the war. At present, Japan holds the key areas, but production in China for Japanese use has been greatly restricted. Also in Manchuria the decline in production and export of wheat, soy beans, and millet (W. I. Ladejinsky, "Manchurian Agriculture under Japanese Control," *For. Agric.*, Aug. 1941, 309-340) has meant that Japan has very little to show for her conquest of that country. The plan to ship Manchurian millet to Chosen which would, in turn, send rice to Japan has not been a success. There are further indications of the increasing manufacturing in Asia (O. H. Spate, "Beginnings of Industrialization in Burma," *Econ. Geogr.*, Jan. 1941, 75-92), with the increase of rice mills, sugar, and oil refineries.

AFRICA

Africa has been brought into the limelight by the war but it is still largely unknown as far as detailed studies of production is concerned. Most studies are of a general nature (H. L. Shantz, "The Agricultural Regions of Africa," Part II, Vegetation

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and Potential Production, *Econ. Geogr.*, July 1941, 217-249), consisting of broad surveys by political divisions since most of the continent is not ready for detailed surveys. But the effect of the war on Egypt is noted in detail (N. Wm. Hazen, "Wartime Aspects of Egyptian Agricultural Economy," *For. Agric.*, June 1941, 217-247). The export of cotton has fallen disastrously—much used to go to

Germany—as has the import of tobacco and fertilizer. The interest in French West Africa has been more in terms of strategy than in products, due to the importance of Dakar, but the French had developed this vast territory to the point where it could export quantities of cotton, peanuts, and sisal (Pieter K. Roest, "French West Africa," *For. Agric.*, Sept. 1941, 353-396).

MINERALOGY AND PETROGRAPHY

BY CLIFFORD FRONDEL

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MINERALOGY OF THE MANGANESE OXIDES

The residual deposits of manganese oxides are an important source of manganese but knowledge of the mineralogy of the ores has been quite unsatisfactory. X-ray diffraction methods of study have been applied in recent years to the study of these fine grained and often admixed ores with marked success. Investigations carried on during the year at Harvard University and the U. S. Geological Survey have shown that much of the material formerly classed as psilomelane in actuality is composed of the manganese dioxide, pyrolusite. Psilomelane itself contains both manganese and barium as essential constituents and is widely dispersed, although usually only in minor amounts, in residual ores. The identity of the crystallized tetragonal manganese dioxide polianite with the botryoidal dioxide pyrolusite also has been confirmed. Hollandite, a manganese-barium mineral near psilomelane in composition that constitutes an important constituent of some Indian ores, recently has been found in a deposit in Montana. X-ray and chemical studies also have established the isomorphous relation of hollandite to the lead-manganese mineral coronadite. The latter mineral has been recognized as an important constituent in certain ores from Arizona.

GEOCHEMISTRY OF THE SARATOGA SPRINGS

L. W. Strock has published the results of an extended geochemical study of the mineral waters of Saratoga Springs, N.Y. The work was undertaken by the New York State Research Institute of the Saratoga Spa for the purpose of obtaining more complete and accurate knowledge of the composition of the waters and of the relation of the springs to the geology of the region. Particular emphasis was placed on the spectrographic analysis of the less abundant and rare constituents.

MECHANICAL TWINNING IN CRYSTALS

The increased interest by metallurgists and geologists in the interpretation of preferred orientations of the crystals composing deformed metals and rocks, has directed attention to the mechanism of plastic deformation of single-crystals. J. F. Bell (Mass. Institute of Technology) has now reviewed the methods and results of morphological studies on mechanically twinned crystals. Twin gliding in crystals may be described as a process of simple shear, but at present this process cannot be applied to an analysis of the actual paths of movement of atoms in the crystal during the deformation process. Formulae relating the indices of a crystal face before and after

mechanical twinning to the elements of the deformation are reviewed. A new and direct graphic solution of the deformation elements is presented.

CRYSTAL STRUCTURE OF SYLVANITE

The atomic arrangement in crystals of the important mineral sylvanite, a telluride of gold and silver, has been analyzed by Weissenberg and powder x-ray methods by G. Tunell (Geophysical Laboratory, Carnegie Institution).

CARBONATES AND OXIDES OF BISMUTH

An extended survey of the natural secondary compounds of bismuth has been reported. X-ray and dehydration studies prove that a number of little known, supposedly distinct, natural carbonates of bismuth are all identical with Bi_2CO_3 (bismutosphaerite). The common mineral bismutite, thought to be a hydrated carbonate, is found to contain only non-essential water and to be identical with bismutosphaerite. The so-called bismuthochers also are identical with this substance. Reported syntheses of definite hydrates could not be verified. The obscure mineral bismite has been ascribed to bismuth oxide, but neither anhydrous nor hydrous oxides of bismuth were found to be represented among a large number of supposed occurrences. Most of the specimens examined proved to be a carbonate or to be bismuth oxychloride (bismoclite). The latter substance, hitherto known only from a single occurrence, has been described from a number of new localities and probably is widespread in nature.

PARAGONITE

The validity of paragonite, a supposed sodium mica, as a distinct species separate from potassium mica, muscovite, long has been questioned. W. T. Schaller and R. T. Stevens of the U. S. Geological Survey have now analyzed material from three localities and have established the occurrence of the mineral in nature.

COLOR AND OPTICS OF BIOTITE

A statistical study of numerous analyses of biotite mica indicates that the varied color of this mineral is dependent upon the relative content of iron, magnesia, and titania. Iron is responsible for producing the green color, while titania gives the red and brown colors. Magnesia apparently is able to dilute or mask the color effects produced by titania. In general, color is not a good indication of the chemical composition of biotite, largely due to the complex chemistry of the system. Further, it is found that no certain information as to the chemical composition of biotite can be obtained from the refractive indices.

CRYSTALLOGRAPHIC PROCEDURES

A useful and authoritative summary of the principles and methods of crystallographic calculations has been presented by C. W. Wolfe (Boston Univ.).

TYPES OF COLORING IN MINERALS

Kennard and Howell (Pomona College) have collected and correlated the data relative to the various types of coloring which can occur in minerals. The several types are classified and subdivided according to the means or mechanism of the color produced, their characteristic features are described, and illustrative examples are cited. A fundamental distinction is made between coloring due to characteristic absorption or reflection which is determined by the chemical composition of the substance, and coloring caused by structural characters. Both body color, due to selective absorption of transmitted light, and surface color, due to selective reflection of incident light, are significant in the former type of color. The more important types of structural color are those produced by interference and scattering. The colors observed in precious opal and mother-of-pearl are recognized as due to interference between thin lamellae which compose these sub-

stances. Tyndall scattering, caused by the selective scattering of light included, usually foreign, particles or structures the size of which relative to the wave-length of light is small, is represented by the blue quartz of metamorphic rocks. Ordinary diffraction colors, caused by regularly repeated, oriented, structures or optical inhomogeneities, as in the familiar diffraction gratings, do not appear to be common in nature but are probably found in certain agates.

HYDROTHERMAL SYNTHESSES OF CLAY MINERALS

F. H. Norton (Mass. Institute of Technology) has continued experiments first reported in 1939 on the decomposition of feldspars in water and carbonic acid at high temperatures. The recent work has been extended to spodumene, nephelite, scollecite, and other silicates. Considering the results obtained in the investigation as a whole, it is found that the rate of decomposition to clay minerals decreases at very high concentrations of carbonic acid and reaches a maximum at temperatures of about 300° C. In some cases strong inorganic acids such as HCl are less effective than carbonic acid. In most instances a single end product is formed, such as montmorillonite, kaolinite, or sericite, but a mixture of clay minerals sometimes is formed simultaneously. L. C. Armstrong (Minnesota) has investigated the decomposition of finely ground feldspar and spodumene by water at ordinary temperature. About half of the alkali content was lost by prolonged leaching.

THERMAL EXPANSION OF QUARTZ AND ADULARIA

The first two of a series of experimental studies of the linear thermal expansion of rock-forming minerals has been published by J. L. Rosenholtz and D. T. Smith (Rensselaer). The information to be derived from these studies is of great potential usefulness in the field of geophysics. A study of quartz established the point of thermal inversion between the alpha and beta modifications at 573.1° C, in excellent agreement with

accepted values. A second inversion was recognized at about 872° C which apparently represents the inversion from quartz to tridymite. Data also is given for the equatorial and the axial mean coefficients of linear thermal expansion of quartz. Adularia feldspar was studied at temperatures up to 1000° C parallel to the three main crystal axes for linear thermal expansion and other thermal changes. The adularia-sanidine inversion probably occurs at 900°.

OCCURRENCE OF WILLEMITE

The zinc silicate willemite is generally considered, because of its importance at Franklin, N. J., to be characteristic of deposition under conditions of high temperature. A survey of the known occurrences by F. H. Pough (American Museum of Natural History) now emphasizes that the mineral is instead typically a secondary product, formed by the weathering and alteration of primary zinc minerals.

NEW MINERALS

The year, 1941, saw a marked decrease in the number of descriptions of new minerals. Most of the new species were described by American investigators. *Barbertonite*, *sjogrenite* and *manasseite* are new carbonate-hydroxides of magnesium. Their identity and polymorphous relation to the minerals of the pyroaurite group was established by x-ray powder study. *Bradleyite*, a new sodium phosphate-magnesium carbonate, was recognized in drill cores of an oil well near Green River, Wyo. A restudy of the ill-defined mineral *paramelaconite*, from Bisbee, Ariz., has proven this substance to be a new oxide of copper. The mineral is unique in that the actual composition is based on a tetragonal oxygen-defect structure which only approaches the ideal composition, CuO, analogous to tenorite. The rare basic chloride of lead and copper, *diaboleite*, has been found to be an ore mineral at the Mammoth mine, Tiger, Ariz. The name *columbo-microlite* has been given to a variety of pyrochlore found as grains in albitite at Eshowe, Natal. The com-

pound AsSb, *stibarsen*, has been found in the Varutrask pegmatite, Sweden, associated with native antimony and arsenic. The name *armenite* has been given to a new barium containing silicate from the Armen silver mine, Sweden. *Saamite* is a strontium-rich variety of apatite from the Kola Peninsula, Russia. *Titano-lavenite* is a titanium-rich variety of lavenite from the Lovozero tundra, Kola. A variety of amphibole found in asbestos deposits in the North Caucasus, Russia, has been termed *abkhazite*. *Donbassite* is a new hydrous aluminum silicate found in ore veins in the Donetz Basin, Russia. *Kurnakovite* is a new hydrous magnesium borate found in the Inder, Russia borate deposits.

PUBLICATIONS

Australasian Antarctic Expedition, 1911-1914; Scientific Reports (Vols. 3,

Parts 1-4, 330 pp.; vol. 4, Parts 1-13, 429 pp. 1940). The scientific reports of this expedition are embodied in a ten-volume series, of which the present two volumes treat of the petrology and petrography of rocks collected in Adelie Land and other regions of the Antarctic.

Dana's Manual of Mineralogy, 15th edition, revised by C. S. Hurlbut, Jr. (480 pp., 20 plates, 436 figs., New York, 1941). This well-known work, originally published by J. D. Dana in 1848, has been thoroughly revised and brought up to date. Numerous fine half tones from photographs of actual mineral specimens add to the attractiveness of the volume.

Sedimentary Petrography, by H. B. Milner, third edition (666 pp., 52 plates, 100 figs., London, 1940). A comprehensive treatise on the petrography of both consolidated and unconsolidated sediments.

TERRESTRIAL MAGNETISM AND ELECTRICITY

By JOHN A. FLEMING

CARNEGIE INSTITUTION OF WASHINGTON

OBSERVATORIES—NORTH AMERICA

The five magnetic observatories of the United States Coast and Geodetic Survey continued in operation. At the San Juan Magnetic Observatory (Puerto Rico) an improved variometer was installed with provision for the elimination of humidity effects. At Cheltenham (Maryland) complete records were obtained of the great geomagnetic storms of March 1, July 5, and Sept. 18, 1941. At Tucson (Arizona) the new instruments installed in 1941 were operated simultaneously with the old instruments to secure continuity of record, and at Sitka (Alaska) it was found that a satisfactory continuity of observations had been obtained in the transfer of the observatory to a new site in 1940.

The geomagnetic records were continued at the Meanook and Agincourt observatories in Canada by the Do-

minion Observatory and at the Teoloyucan Observatory in Mexico by the National Astronomical Observatory.

In Alaska the Department of Terrestrial Magnetism of the Carnegie Institution of Washington established a temporary magnetic observatory at College to function for a year from July 1, 1941.

In Greenland the Godhavn Magnetic Observatory was continued in operation. There was also built during the summer of 1941 a temporary magnetic observatory at Ivigtut, Greenland, under the auspices of the Danish Meteorological Institute. The Ivigtut station was intended to be a base-station for a magnetic survey, in the summer of 1941, of the eastern part of Greenland; as the observers were unable to leave Copenhagen, the initiation of the Observatory's regular program was postponed to the spring of 1942.

TERRESTRIAL MAGNETISM AND ELECTRICITY

All the measurements on the Carnegie Institution of Washington primary magnetic standard were completed during the year, and the analysis of the results was almost finished. They indicate that the required accuracy has been attained so that the coil-constants can be specified to approximately one part in a million. The actual instrument is not quite finished. It is ultimately to be installed at the Cheltenham Magnetic Observatory of the U. S. Coast and Geodetic Survey. Meanwhile the control of magnetic standards was maintained at the Cheltenham Magnetic Observatory of the Coast and Geodetic Survey in cooperation with the Department of Terrestrial Magnetism of the Carnegie Institution of Washington as in past years. (For details regarding the institutions in charge of observatory work, see *THE AMERICAN YEAR BOOK*, 1938 (pp. 697-704).

SURVEYS

In Alaska observations were made through flights with airplanes and on the ground to determine the degree to which the effects of strong magnetic anomalies at the surface extend into the upper atmosphere.

In Mexico, secular-variation data were obtained during May, 1941 at three stations in the States of Oaxaca and Puebla, and a new station was established in the State of Puebla.

The United States Coast and Geodetic Survey began a cooperative magnetic survey with the American Republics bordering on or adjacent to the Caribbean Sea. The purpose is to reoccupy repeat-stations of the Department of Terrestrial Magnetism of the Carnegie Institution of Washington and to obtain data for the preparation of a new isogonic chart of the region to replace the one issued in 1915. Observations within the United States were continued by the Coast and Geodetic Survey. This work showed the Survey's new transit-magnetometer to be superior to the compass-declinometer in declination and, furthermore, an excellent instrument for determination of magnetic intensity.

Effective Dec. 23, 1940, the name of the Division of Terrestrial Magnetism and Seismology of the U. S. Coast and Geodetic Survey was changed to the Division of Geomagnetism and Seismology.

UNITED STATES ANTARCTIC EXPEDITION

The United States Antarctic Expedition which arrived in Antarctica Jan. 12, 1940, returned to the United States in May, 1941. Regular recordings with the magnetograph began April 25, 1940, and were discontinued Jan. 22, 1941, when the observatory was dismantled and the instruments were packed for return to the United States. The routine auroral program could not be started until April 1, 1940. Between April 1 and Sept. 15, 1940, over 1,600 individual auroral displays were observed and recorded. The majority of the displays noted were of "ray-structure" appearing mostly in the forms of "isolated rays," "bundles of rays," and "ray-bands"—chiefly of intensity one or two, and white in color. There were some of intensity three and four, these brighter displays being usually greenish in color and, as a rule, very active. Red and purple were also noted at times and always accompanied a very brilliant and active display. In the reduction of the observations, now in progress at the Department of Terrestrial Magnetism, special attention will be given to the relationship between auroral occurrence and magnetic disturbance. The first reports on the scientific results of the Expedition were presented at the autumn meeting of the American Philosophical Society, Philadelphia, Nov. 21-22, 1941.

LOUISE A. BOYD ARCTIC EXPEDITION

The Louise A. Boyd Arctic Expedition of the National Bureau of Standards, which sailed from Washington on June 11, 1941, returned to the United States Nov. 3, 1941. Both Miss Boyd and Captain Robert Bartlett, who commanded the expedition schooner *Effie M. Morrissey*, have had

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wide experience in arctic exploration. In the course of the expedition, magnetic observations were obtained at 14 stations in Newfoundland, Greenland, Devon Island, and Baffin Island. Ionospheric characteristics as determined by special radio measurements, auroral manifestations, and measurements of ultraviolet-light intensities were included in the program of work. The U. S. Coast Guard and the Department of Terrestrial Magnetism of the Carnegie Institution of Washington cooperated in the arrangements for the Expedition.

OBSERVATORIES AND SURVEYS— SOUTH AMERICA

The Pilar, La Quiaca, South Orkneys, and San Miguel observatories in Argentina, the Vassouras Observatory in Brazil, the National Observatory of San Bartolomé in Colombia, and the Huancayo Observatory operated by the Carnegie Institution of Washington, in Peru, maintained their geophysical programs throughout 1941.

During the year 1941, 53 stations, many of which are exact reoccupations of stations established by the Carnegie Institution of Washington, were occupied in Argentina. One observer has been maintained continually in the field, and it is hoped that reoccupation of the old field-stations (about 150) with 25 new ones will be finished by June, 1942. On the basis of the results thus obtained, new magnetic charts of the Republic of Argentina will then be issued. The survey, however, will be continued until a total of 1,000 stations will have been occupied, probably over a period of ten years.

As part of the program of cooperative work with the American republics, a repeat geomagnetic survey was started by the U. S. Coast and Geodetic Survey, working with representatives of the different republics.

WORLD SURVEY

The Carnegie Institution of Washington continued its geomagnetic program at the Watheroo Magnetic Observatory in Western Australia, its

cooperation with the Apia Observatory, and its cooperation in field-work with the Aerial, Geological, and Geophysical Survey of Northern Australia, and the Adelaide Observatory of South Australia.

GEOMAGNETISM

The international character of the present emergency has hampered somewhat the realization of the resolution, adopted by the Association of Terrestrial Magnetism and Electricity of the International Union of Geodesy and Geophysics at its Washington meeting in 1939, that the recently devised three-hour-range index of geomagnetic activity should replace from 1940 the scheme of numerical character of days. That these indices from the world's magnetic observatories may be available for reference, they are being collected and compiled at the Department of Terrestrial Magnetism of the Carnegie Institution of Washington.

An investigation of the polar fields of sudden commencements of magnetic storms reveals that the geomagnetic north component diminishes and the vertical component increases with increasing geomagnetic latitude in the region inside the auroral zone.

Average values of the disturbance diurnal variation, the solar daily variation, the daily means of disturbance and non-cyclic change for international disturbed and quiet days were reduced for nearly all stations of the Polar Year 1932-33. These data are being used in the study of the average characteristics of geomagnetic fields.

A simple method for correcting mean daily observations at field-stations to mean of year, on a world-wide scale, was found practicable, permitting considerable improvement in many estimates of the magnitude of secular change at field-stations through the use of data for magnetic observations at considerable distances from the field-station. An investigation showed that the monthly mean departures from annual means of magnetic intensity varied in a systematic way with po-

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sition over the Earth. It appears highly probable that the quality of the observations of fluctuations in the field at observatories can be rather rigorously compared on a basis of this kind.

A powerful method for analyzing geomagnetic fields by surface integrals was further developed which usefully supplements that of spherical harmonics which sometimes becomes unwieldy in the case of special types of fields. The data may be represented in terms of functions other than spherical harmonics or in graphical form.

AURORAL DISPLAY IN THE SEPTEMBER STORM

The greatest auroral display observed in the eastern United States during recent times accompanied the geomagnetic storm of Sept. 18-19, 1941. Favored by a clear sky and a moonless night the phenomenon is one which will be remembered for many years by millions of people who have never before had the opportunity of witnessing a great display. Reports of the aurora were received from many parts of the United States of America. The most intense effects were observed in the east where they extended as far south as Florida, although accounts of the display have been received from Pasadena, Calif. Associated geomagnetic disturbance recorded at observatories show several aspects meriting special comment. The storm was closely associated with the central-meridian passage of a large active sunspot-group in low heliographic latitudes. Shortly before the central-meridian passage a notable increase in the area of the group occurred. Minor effects were noted on transmission-lines of the Pennsylvania Water and Power Co. which connect plants on the Susquehanna River with distribution-systems in Baltimore and Washington.

Some interest is attached to a comparison of the three great magnetic storms of the present sunspot-cycle—those of April 16, 1938, of March 24-25, 1940, and of Sept. 18-19, 1941.

Each of these storms is approximately equal to any which has occurred since the inception of regular magnetic recording. The storm of April, 1938, is noteworthy for the rapidity with which the typical phases of the storm were executed. It produced the greatest range ever recorded at Huancayo, Peru. The storm of March, 1940, caused the first and only serious interference with electric power-systems ever reported and produced the greatest range ever recorded at Potsdam, Germany. The storm of September, 1941 is remarkable for the auroral display observed in the eastern United States and produced the greatest range ever recorded at Cheltenham, Maryland. These simple facts demonstrate the difficulties of rating any magnetic storm as the "greatest" of all times.

GEOELECTRICITY

Analyses of the atmospheric-electric data for the 11-year period 1924-34 (chiefly for the Watheroo Observatory) were made. Some results of these analyses follow: (a) Seasonal change in the diurnal variation of the conduction-current was disclosed by comparing the average characteristics of the month of January with those of the month of June for the 11-year period. (b) Local meteorological circumstances have little effect on the conduction-current. In a brief survey of data for both Watheroo and Huancayo observatories, no significant correlation was found between the atmospheric-electric elements and either the temperature or relative humidity of the air, but a negative correlation between conduction-current and vapor-pressure was indicated. (c) The columnar resistance of the atmosphere over Watheroo relative to that over the oceans, and temporal variations in the resistance, were estimated by comparing data obtained over the open oceans during cruises of the *Carnegie* with corresponding data for Watheroo. The result of chief interest is that these values vary in a regular manner during the day. The diurnal-variation curves for Watheroo, Huancayo, and

Tucson are similar when plotted on local mean time. A maximum is reached around midnight which is about 30 per cent greater than the minimum which occurs during the forenoon. The character of the diurnal-variation curve remains essentially unchanged throughout the seasons at each station.

It was found that atmospheric-electric phenomena at the Earth's surface are not subject to the characteristic disturbances when bright "solar flares" appear accompanied by characteristic disturbances of the Earth's magnetic field, of electric currents in the Earth, and of short-wave radio communication.

The investigations of R. E. Holzer and E. J. Workman at the University of New Mexico were continued. Studies of active centers of charges in thunder-storms were made by recording near-instantaneous changes in the potential-gradient at the Earth's surface at seven or more stations. Time-resolving power of the equipment is sufficient to permit the description of dipole changes involved in single elements of repeated discharges.

COSMIC RADIATION

At the Department of Terrestrial Magnetism, S. E. Forbush continued statistical analyses of hourly values of cosmic-ray ionization, bursts, and barometric pressure from Cheltenham, Christchurch, Godhavn, and Huancayo. He established more critical tests for existence of sidereal and 27-day variations and world-wide changes.

Prof. V. F. Hess at Fordham University evaluated cosmic-ray records obtained on four cruises of the S. S. *Santa Ana* between New York and Valparaiso, for investigation of effects of latitude and atmospheric temperature. An automatically recording twin telescope for counting mesotrons was installed at Fordham and operated from March 23, 1941. A good (negative) correlation is found between intensity of mesotrons and mean atmospheric temperature as well as ground - temperatures. Preliminary

computation of the lifetime of mesotrons indicates that it is 8×10^{-7} second, considerably shorter than generally assumed.

Prof. R. B. Brode at the University of California completed tests of his magnet for automatically recording cloud-chamber tracks in the study of cosmic rays.

UNIVERSITY OF CHICAGO PROGRAM

Under the direction of Prof. A. H. Compton at the University of Chicago good progress has been made in the extensive program there. Among the studies provisionally completed and results are the following:

(1) Mountain experiments with cosmic rays in latitude-effect for soft *versus* hard component with counter-tubes show a slightly greater effect for the soft component; (2) time-variations of changes of ionization at high altitudes show both magnetic and seasonal changes several fold greater than at sea-level; (3) the composition of cosmic rays shows (a) identification of abundant slow mesotrons with some occurring in pairs, through cloud-tracks in airplanes up to nine km, (b) increase in relative number of showers at great depths, chiefly penetrating charged particles, through shower-experiments and cloud-tracks in mines, and (c) 25 per cent excess of positive mesotrons, from relative number of positive and negative mesotrons and energy-distribution at sea-level up to 10^{10} electron-volts; (4) properties of the mesotron are determined as follows: (a) law of abundance valid to 1500 m water, through penetration and identification of mesotrons in deep mines, (b) mesotron radioactive with mean life under 2.5 microseconds, results being affected by production of mesons, through disintegration of mesotrons by dissipation in air *versus* graphite; and (c) Coulomb scattering plus nuclear scattering, through scattering of mesotrons in tungsten. Many of the data have been obtained with the support of the Commission on Cultural and Commercial Relations with Latin America and

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through cooperation with cosmic-ray investigators in Latin America.

COSMIC RADIATION IN HIGH ALTITUDES

Dr. T. H. Johnson at the Bartol Research Foundation, in further consideration of his results on the slight east-west asymmetry of cosmic radiation in high latitudes, developed equations which required the assumption, to accord with observed data, that 10 to 20 per cent of total radiation consists of positives unbalanced by an equal number of negatives. The design of a high-pressure Wilson cloud-chamber was made and construction begun in March, 1941, for determining the masses of the rays involved. From coincidence-counter measurements of interaction between slow mesotrons and atomic nuclei, it was concluded that nuclear-energy losses were undetectably small in comparison with those resulting from ionization.

KORFF AND MILLIKAN RESEARCHES

Dr. S. A. Korff at the Bartol Research Foundation has in progress discussion of the long-period records obtained on the United States Antarctic Expedition and is examining fluctuations for correlations with external temperature, magnetic disturbances, and upper-air meteorology. He finds that the theory of proportional counters satisfactorily explains observed data in terms of discharge mechanism.

Dr. R. A. Millikan at the California Institute of Technology reports considerable progress in the two largest undertakings: (a) building of a large cosmic-ray magnet and cloud-chamber for more accurate and more dependable determination of the nature and properties of mesotrons, and (b) accumulation of data on origin and energy-distribution of incoming cosmic-ray particles.

IONOSPHERE

Investigation of the polar ionosphere has been undertaken by the Department of Terrestrial Magnetism

and the University of Alaska through the establishment of a complete polar observatory at College, near Fairbanks, Alaska, in the zone of maximum auroral activity. Operation was begun July 1, 1941. All known methods of investigation of the high atmosphere including magnetic, ionospheric, and auroral observations with the best-known continuously recording equipment are employed. The acquisition of data from this Observatory is of great importance since they increase the significance of those from Huancayo and Watheroo. The latitude-range over which observations are now being made is from Watheroo, latitude 30° south, to College, at latitude 60° north. Such a range of position permits, for the first time, analysis of the important and complicated variation of the upper atmospheric electrification with latitude, and provides for the more accurate interpretation of conditions of radio-wave propagation.

Continued observation of the ionosphere at Huancayo and at Watheroo is now leading to an accumulation of homogeneous data sufficient to permit more detailed systematic analysis of electrification of the outer atmosphere than ever before possible. These data are especially valuable in predicting the performance of radio-wave propagation over long distances under the present circumstances of restricted international collaboration. Past and present information on the ionosphere from widely separated points is proving most useful to communications organizations in the present emergency and methods of computation and prediction of the performance of radio-transmission in the ionosphere over any path are being prepared for use at observatories.

The automatic equipment at the observatories is providing a steadily increasing store of data which brings the outlines of the theoretical questions into relief and permits attack with powerful methods of analysis with reasonable hope of solution. Among these problems are the systematic changes of ionization of the

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outer atmosphere associated with geomagnetic storms, changes which differ with latitude. It seems possible that the cause of the great magnetic storms may be found in the complicated changes of electrification in the atmosphere high overhead. Detailed analysis of the great magnetic storm of March 24, 1940 has led to much clearer ideas of change in the high atmosphere during such disturbances, indicating that definite high atmospheric movements may be associated with such storms.

Examination of automatic multi-frequency ionospheric records, obtained at the Kensington Experimental Station (Maryland) during the intense magnetic storm of March 1, 1941, reveals that the ionized regions of the Earth's outer atmosphere were greatly disturbed and that the period of greatest disturbance corresponds to that of greatest magnetic activity.

PUBLICATIONS

The *Transactions of 1941 of the American Geophysical Union*, issued in three parts (1,035 pages), contain papers and reports presented at the 22nd annual meeting of the Union, among which are those of its Section of Terrestrial Magnetism and Electricity which indicate the progress of geomagnetic and geoelectric research in North America.

Science Service continued publication of the American Ursigrams of geophysical data in its weekly *Research Aid Announcements*, including the American magnetic character-figures for each Greenwich half-day and three-hour-range indices (K-numbers).

The 38th annual report of the Director of the Department of Terrestrial Magnetism of the Carnegie Institution of Washington (issued December 1941) summarizes the work done in terrestrial magnetism and electricity during the year ended June 30, 1941, and contains a complete list of publications by members of the staff during the report-year.

The map of lines of equal magnetic declination and equal annual change in the United States for 1940 was

issued by the U. S. Coast and Geodetic Survey. The usual accompanying publication has been unavoidably delayed for national-defense reasons. Meanwhile, for the benefit of those interested in change of magnetic declination since earlier dates, these will be available for insertion in copies of "Magnetic declination in the United States in 1935" (Government Printing Office, Serial No. 592) with instructions for its use for this purpose. The U. S. Coast and Geodetic Survey has also in preparation for publication early in 1942 the "Alaska magnetic table and charts for 1940."

The *Quarterly Journal of Terrestrial Magnetism and Atmospheric Electricity* published by the Johns Hopkins Press, completed in 1941 its 46th annual volume. Besides original articles, it included sections on magnetic storms, magnetic character-figures, ionospheric data, sunspot-numbers, notes, reviews, and bibliography. (During 1941 a series of papers dealing with the mathematical treatment of geomagnetic charts which indicate possible improvement in future isomagnetic charts, was published).

A Works Projects Administration computing office in New York City is making it possible to complete the work on the records of all the U. S. Coast and Geodetic Survey observations for the International Polar Year 1932-33. Much of the revised information is available at the office of the Survey and publication of the results will soon begin.

ALEXANDER DALLAS BACHE CENTENARY

There was held in Philadelphia, Feb. 14-15, 1941, a meeting in commemoration of the life and work of Alexander Dallas Bache, and a Symposium of Geomagnetism with the cooperation of the American Philosophical Society, U. S. Coast and Geodetic Survey, Department of Terrestrial Magnetism of the Carnegie Institute of Washington, and Girard College. On Feb. 15, 1941, there was a celebration of the hundredth anni-

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versary of the establishment of the Alexander Dallas Bache Magnetic Observatory on the grounds of Girard College, the first magnetic observatory founded in the United States.

The 11 papers presented at the Symposium have been published in a special number of the *Proceedings of the American Philosophical Society* (vol. 84, No. 2, 1941).

METEOROLOGY AND CLIMATOLOGY

By ROBERT G. STONE

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GENERAL

The amount of professional meteorological literature in 1941 did not seem to show the expected depletion compared to previous years, but evidently much of it represented research begun before the defense emergency became acute. But in other respects meteorological services were considerably deranged from normalcy and re-oriented to full war conditions. The importance of weather and meteorological services in war was pointed out in *THE AMERICAN YEAR BOOK*, 1940, 777-81.

PROGRAM FOR TRAINING METEOROLOGISTS

The great expansion in the Army and Navy required continuance of the intensive meteorologists' training program instituted in 1940 at five universities by the Army Air Corps and the C.A.A., and this occupies the full time of many meteorologists as teachers. There is a real shortage of trained men owing to the demands of the services and expansion of the Weather Bureau and to competition of better-paid professions. Although the Army and Navy have their own meteorological staffs, they must call upon the Weather Bureau and universities for many special services and research. Thus the war is expanding the profession on all fronts at once.

WAR RESTRICTIONS ON WEATHER REPORTS

The declaration of war on Dec. 7 was followed by a great restriction on the distribution of current weather reports and forecasts to the public, as a measure of withholding information

which would facilitate the enemy in attacking on land or sea. Forecasts are now announced only for limited regions and periods not over 12 or 24 hours in advance and in not very specific terms except occasionally when weather that might cause serious civilian damage is coming. No weather maps are printed now until several weeks late.

CONDENSATION AND PRECIPITATION RESEARCH

The research published in 1941 was, as usual, mostly "practical" or "applied" meteorology and probably much of it will prove to be ephemeral in value, as always. Some important papers on the physics of condensation and precipitation appeared. Houghton, Bemis, Cunningham, Dotson, Simpson, and Findeisen seem to have, in one way or another, cast great doubts on the long-held theory that the chief source of nuclei of condensation in the atmosphere is from sea salt spray; rather, sulphates are probably the main source.

TROPICAL WEATHER STUDIES

The study of tropical weather has been drawing much interest of late due to the extension of aviation into low latitudes and the interests of defense. Hurricane forecasting has always been a big problem, but now the forecasting of lesser tropical weather phenomena is being tried. This problem is very difficult, however, and requires somewhat different methods than in middle latitudes. Frolov of Martinique published several papers in 1941 in which he attempts to analyze Caribbean weather into

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waves which might be used for forecasting. Hurricane forecasting was improved by use of isallobaric charts, which may show a storm forming several days before it is noticeable otherwise.

ATMOSPHERIC RADIATION

Valuable contributions were made to the knowledge of radiation transfer in the atmosphere. Elssasser and F. A. Brooks published more accurate measures and computations of the long-wave radiation in the atmosphere, which is important for fog and frost forecasting. The Weather Bureau improved its solar-radiation work greatly by new and better instruments and special observations of illumination, radiation penetration in snow, ultraviolet intensities, infrared radiation, etc.

CLIMATOLOGY

Climatology finds special utility in defense and war, because the strategy and tactics of the military must consider the climate of the regions where it puts up bases, and has to fight. This is done mostly by tabulating and working out data on past weather already published.

The five-day forecasting system introduced by the Weather Bureau in 1940 was much improved in 1941, and a large report on the methods published by Massachusetts Institute of Technology. Since Dec. 9 the forecasts are no longer made public. The Bureau is also trying other methods of long-range forecasting as the demand for such forecasts has greatly increased.

METEOROLOGICAL INSTRUMENTS

Numbers of new or improved meteorological instruments for measur-

ing radiation, rainfall, snow, humidity, and upper-air conditions were announced. One device (helionephograph) indicates the thickness of fog or low cloud by the amount of light that penetrates it. The technique developed several years ago by A. W. Freind, for measuring height of strata in the upper-air by means of radio-reflections, was brought to a more practical stage that promises, perhaps, remarkable applications. The radiosonde, or radiometeorograph, now in routine use, was also improved further, and was re-designed to substitute plastics for metals needed in defense industries.

PUBLICATIONS

A number of new books appeared that are noteworthy:

B. Hourwitz: *Dynamic Meteorology*.

S. Petterssen: *Introduction to Meteorology*.

W. E. K. Middleton: *Meteorological Instruments and Visibility in Meteorology* (second edition).

U. S. Dept. of Agriculture: *Climate and Man* (yearbook for 1941) *The Yearbook 1941* of the Department of Agriculture is a most remarkable work and deserves wide notice. It covers most phases of weather and climate and their effects on man, animals, and crops, in a semi-popular, semi-technical style, each chapter by an authority, with many illustrations and tables of data, references. It is a big book and worth several times its cost to both amateur and professional, a great credit to the government agencies which got it up (Weather Bureau, Soil Conservation Service, Forest Service, etc.).

AMERICAN EXPLORATION

BY ROBERT M. BROWN

PROFESSOR, RHODE ISLAND COLLEGE OF EDUCATION

ANTARCTIC

The United States Antarctic Expedition under the command of Rear

Admiral Richard E. Byrd brought to a conclusion a two years' trip early in May, 1941, when the U. S. M. S. *North*

AMERICAN EXPLORATION

Star and the U. S. S. *Bear* reached Boston. Two bases were established in Antarctica; the East Base on Palmer Peninsula near 65 degrees west longitude, and the West Base on the Bay of Whales, near 165 degrees west longitude, at the extremities of the Pacific Quadrant of the continent.

The two vessels landed a party at the West Base during January, 1940. The *North Star* then proceeded to Valparaiso for an airplane and supplies and later landed the East Base party. Meanwhile, the *Bear* made short trips from the West Base, and flights from the vessel were made in the sea plane to explore the coast waters and adjacent land topography. The *Bear* left the Bay of Whales district on Feb. 1, 1940, sailed across Ross Sea, and then eastward off James W. Ellsworth Land to the East Base where it met the *North Star* on March 3. On the way to the East Base, the crew of the ship made three flights southward to the continent. On March 21, the two vessels left for home and returned to Antarctica during the closing days of 1940 to collect the land parties. Both vessels left the Bay of Whales on Feb. 1, 1941 with the West Base party and their equipment. At the East Base, 75 miles of ice blocked the progress of the ships to the Base and the land party and their equipment were finally brought to the boats by plane, and late in March, 1941 the entire party set sail for Boston.

During the absence of the vessels, the West Base party, by airplane and dog sleds investigated the coast area lying between Mt. Hal Flood 130 west longitude and Mt. Hope on the edge of the Ross shelf ice, 165 east longitude while the East Base party followed a like procedure of exploration and collected data and photographs from 60 west longitude to about 85 west longitude.

The last flight of the West Base party with the *Condor* plane on Jan. 2, 1941 to meet the returning sledge parties was disastrous as the plane caught fire. A landing was effected safely, distress signals sent out, and the Beechcraft plane dispatched to aid

the crew of the *Condor*. As it was impossible to repair the damage, the plane was then abandoned and the Beechcraft ferried the party to the West Base.

The expedition was under the supervision of the United States Antarctic Service, an executive committee appointed by President Roosevelt, and was financed through the Division of Territories and Island Possessions of the Department of the Interior, for investigation in the Antarctic.

ARCTIC

The Louise A. Boyd Arctic Expedition of the National Bureau of Standards sailed June 11, 1941 on the schooner *Effie M. Morrissey*, Capt. Robert A. Bartlett in command. The objectives were observation of ionosphere characteristics as determined by special radio measurements, geomagnetism, auroral manifestations, and the measurement of ultraviolet light intensities. The United States Coast Guard and the Department of Terrestrial Magnetism of the Carnegie Institution cooperated in the arrangements for the expedition. Captain Bartlett brought a collection of Arctic plants from Greenland waters for the National Museum.

ALASKA

Dr. Harry L. Shapiro, Associate Curator of Physical Anthropology, American Museum of Natural History, spent the summer at Point Hope, Alaska where in 1940 were discovered five long avenues of some 600 burned dwellings that probably housed 3,000 people, different in culture from that of the present-day Eskimos or their prehistoric forebears. The ancient culture, called "Ipiutak," is apparently the oldest in the region and in some respects is more complex and better developed than later cultures. Dr. Shapiro brought back one of the largest collections of skeletal remains from any site in the New World, comprising 500 skeletons and covering more than 2,000 years of occupation in the Point Hope region.

Bradford Washburn, executive director of the New England Museum

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of Natural History and Henry S. Hall, Jr. of Cambridge, Mass., with a small party, made the first successful ascent of Mount Hayes, 13,740-foot peak in Alaska.

The American Geographical Society sponsored two expeditions to Alaska and the Yukon Territory during the summer and autumn of 1941 under the direction of W. A. Wood and William B. Osgood Field, Jr.

W. A. Wood, head of the Department of Exploration and Field Research, carried on another season of work in the St. Elias Range, Yukon Territory. Successful ascents of Mt. Wood, 15,880 feet, the highest unscaled peak in North America, and of Mt. Walsh are reported. In addition, geological, physiographic, and glaciological studies have yielded promising results; botanical collections and meteorological observations were made, and mapping flights filled in the gaps in the air surveys begun in 1935.

William B. Osgood Field, Jr., in continuation of a program of expeditions at approximately five-year intervals reported successful glaciological work in southeastern Alaska. Glacier Bay and the glaciers of Lynn Canal and the western slope of the Coast Range between Juneau and Portland Canal were photographed from the air as in 1926, 1931, and 1935, to determine the nature and extent of recent movements and variations of the ice.

MEXICO AND CENTRAL AMERICA

The Botanical Expedition to Guatemala of the Field Museum of Natural History, Chicago, under the leadership of Paul C. Standley, curator of the herbarium, brought back approximately 30,000 specimens of plants. These, with plants of two previous expeditions, will be used as the basis of a volume on the flora of Guatemala. Standley reported that the quinine plantations operated by United States capital have been expanded rapidly and will combat successfully a possible shortage of this drug and yield enough for most of American medicinal and industrial demands. In addition, the

country is operating the only tea plantations outside the Orient.

Paul O. McGrew, assistant curator of palaeontology of the Field Museum of Natural History, and Albert Potter left Chicago during early November, 1941, for Tegucigalpa, Honduras, and thence to the town of Gracias, for the purpose of determining, if possible, when the Isthmus of Panama emerged from the sea and of making a collection of mammals of the country.

Another expedition to attempt to establish the time of the rise of the Isthmus of Panama from the sea left Berkeley on Nov. 9, 1941, under the direction of Rueben A. Stirton, curator of mammals, Museum of Palaeontology, University of California. Stirton will be accompanied by six assistants and expects to make his headquarters in El Salvador and remain there for the duration of the dry season. In addition to studies on the emergence of the Isthmus from the sea, it is planned to complete the collection and study of vertebrate life of El Salvador previously begun.

Henry Dybas, assistant in the Division of Insects of the Field Museum, Chicago, has returned from collecting insects in the region about Cordoba, Vera Cruz, Mexico, and the country to the south. Over 17,000 specimens, chiefly beetles, were obtained from various localities which ranged from semi-arid country to luxurious forests. Dybas was accompanied by Dr. Charles H. Seevers, Central Y. M. C. A. College, and David Bergstrom.

Frank C. Wonder returned from an expedition to Mexico under the direction of Harry Hoogstraal of the University of Illinois with a representative collection of vertebrates of the State of Michoacan for the Field Museum, Chicago.

Dr. Horace C. Richards of the Philadelphia Academy of Sciences explored Lower California and other parts of Mexico for invertebrate fossils.

CARIBBEAN AREA

The fifth George Vanderbilt Expedition headed by George Vanderbilt, a trustee of the Philadelphia Academy

of Natural Sciences, explored the Caribbean and Central American waters and islands for marine and bird life.

Dr. Roy Waldo Miner, curator, Wyllys Betts, field associate, and Francis L. Jacques, staff associate in the Department of Arts Preparation and Installation of the American Museum of Natural History, spent two months early in 1941 in the fishing grounds off Florida for materials for a mural which will depict a Greek sponge fleet in the Gulf of Mexico.

Dr. Raymond L. Ditmars, curator of insects and reptiles of the New York Zoological Park, was in Trinidad during August and September, 1941 to make a collection of vampire bats, stingless scorpions, giant crickets, and cave roaches for a vampire bat cave for the Park, which will be a reproduction of the dimly lighted gallery of one of the Trinidad bat caves.

SOUTH AMERICA

Colin C. Sanborn, curator of mammals of the Field Museum of Natural History, left in July on an expedition to southern Peru, partly sponsored by the Field Museum and partly provided by a fellowship awarded him in 1938, by the John Simon Guggenheim Memorial Foundation. For the Foundation, Sanborn was to be concerned with research on native bats in continuation of work begun in 1938. For the Museum, the work was to be a continuation of the collection of specimens and data begun in 1939-40 as a member of the Magellanic Expedition. Sanborn reports that collections were carried on in southern Peru in localities ranging from sea level to altitudes in excess of 15,000 feet, then in the eastern interior, and finally in the central and northern sections of Peru.

Dr. Alexander Wetmore, curator of the U. S. National Museum, has returned from a two-months expedition into the Guajira peninsula of Colombia with specimens of the bird life of this little known and sparsely inhabited area. M. A. Carriker, Jr., a member of the expedition, remained behind to prepare and arrange for

shipping the remainder of the collection which probably contains a number of hitherto unknown bird species.

J. D. Wimpfheimer was in Ecuador late in the year, 1940 to collect live specimens of small murine opossums for experimental purposes at the American Museum of Natural History.

Dr. Melville J. Herskovits is in Brazil where he will continue his ethnological research during 1942. The work is made possible by a grant from the Rockefeller Foundation to Northwestern University.

Donald Collier, assistant curator of ethnology at the Field Museum, left on Sept. 1, 1941 to spend five months in Ecuador, supervising for the Institute of Andean Research a program of archaeological investigations in which the Field Museum is collaborating. The project is sponsored by the Coordinator of Commercial and Cultural Relations of the American Republics.

THE PACIFIC

The sixth Michael Lerner-American Museum Big Game Fish Expedition, under the leadership of Michael Lerner, field associate in Ichthyology and a trustee of the American Museum of Natural History, left in January, 1941 for Talara, Peru. The main objective was to investigate the habits of marlin reported to be found at that season of the year off the coast of Peru, with the purpose of finding further clues to the breeding places and breeding behavior of this fish, both of which remain a mystery to science. Lerner, as usual, collected specimens on rod and reel, the only method possible along this part of the South American coast. The fishing grounds on the north Peruvian Coast, and in the Cocos Islands near Panama. The collections for the Museum include about 1,500 fishes representing some 200 different species, and about 425 specimens of birds collected on different islands.

Dr. Leonard P. Schultz, curator of fishes of the U. S. National Museum, brought back a collection of about 14,000 fishes together with mollusks, echinoderms, worms, reptiles, birds,

mammals, and plants from the Phoenix and Samoan Islands. He served as naturalist of a U. S. naval expedition.

The Askoy Expedition of the American Museum of Natural History operated in the Eastern Tropical Pacific from early February to late May, 1941, in the area between the Gulfs of Panama and Guayaquil and from the American coast to a meridian 300 miles west of Point Chirambira. The field of investigation included the shorelines of southern Darien, Pacific Colombia, and Ecuador, the islands of the Perlas Archipelago—Gorgona, La Plata and Malpello—and the outlying pelagic waters. The cruise of approximately 4000 miles gave a network of fixed stations where investigations were concentrated. Some of these stations located along north-south lines and others along east-west lines, extending about 300 miles off shore between latitudes 10°N to about 5°S. The studies at the various stations included meteorological observations, surface and vertical temperatures of the waters, sea water samples at different levels, and quantitative catches of ocean life made with a Clark plankton-sampler, a newly devised instrument which records the volume of water passing through the nets, and wherever the depth permitted dredging was carried on. The expedition was under the leadership of Dr. Robert C. Murphy, Dr. John C. Armstrong of the Department of Living Invertebrates serving as presence of sail fish in American waters south of the Equator was definitely established when Lerner secured a 102-pound specimen.

The 210-pound black marlin caught by Lerner in the same locality (off Talara, Peru) established this as the season for this species which the expedition of 1940 failed to encounter either off Peru or Tocopilla, Chile, where striped marlin are numerous. The expedition also obtained two gray squid and a large collection of salt water fish. Harry Raven, associate curator of Comparative Anatomy, who joined the expedition late in July, made anatomical and other studies of

all swordfish and marlin caught and also secured a representative collection of fresh water fishes from Tumbes River, one of the three streams in the great desert section of Peru. Other members of the expedition were Guide-Captain Douglas Osborn of Miami, and David Duncan of Kansas City, Mo.

Archbold Expedition.—A scientific expedition sponsored by Mrs. Anne Archbold left the Fiji Islands late in 1940 in the yacht *Cheng Ho* to collect land shells and botanical specimens for a number of institutions. The locations visited were Gilbert and Ellice Islands, Ocean Island, Solomon Islands, Santa Cruz, New Hebrides, and New Caledonia. Among the institutions to benefit by the collections are Bishop Museum (Honolulu), Harvard University, Arnold Arboretum, New York Botanical Gardens, and the United States Department of Agriculture.

The Leon Mandel Galapagos Expedition, sponsored and led by Leon Mandel for the Field Museum, made a large collection of fishes, reptiles, birds, and mammals in the Galapagos Islands. The scientific staff included Dr. Wilfred H. Osgood, curator emeritus, Rudyerd Boulton, curator of birds, Loren P. Woods, staff taxidermist, and Melvin A. Traylor, Jr. assistant in ornithology. In addition to 15 islands of the Galapagos group, the expedition visited a scientific adviser and Jose G. Correia as preparator. Lieut. Eduardo Fallon, ranking Colombian naval officer of the Pacific, with his knowledge of the coastal areas and his skill as a navigator, was of invaluable aid to the expedition.

Fahnestock Expedition.—Three members of the Fahnestock expedition, Mrs. Bruce Fahnestock and Mr. and Mrs. Sheridan Fahnestock, have returned to the South Seas and are organizing a new cruise in search of rare Pacific birds. The second Fahnestock Expedition, which planned a 40,000 mile cruise among the South Sea Islands during 1940-1941, was ended late in 1940 when their schooner *Director II* struck a reef east of Australia and sank.

OCEANOGRAPHY

By PAUL C. WHITNEY

UNITED STATES COAST AND GEODETIC SURVEY

ATLANTIC OCEAN

Ice Observation and Patrol Service.—In connection with the International Service of Ice Observation and Ice Patrol in the North Atlantic Ocean by the United States Coast Guard, three current surveys of the Grand Banks region were made during the period from March 29 to July 14, 1941. From these surveys three dynamic topographic charts were constructed. At the 195 oceanographic stations which were occupied, the serial observations of temperature and salinity extended to a depth of 1,400 meters where the depth of water permitted, although the current maps were referred to the 1,000-decibar surface. A short post-season cruise was made in the southern part of the Labrador Sea. During this cruise 12 oceanographic stations, with closely spaced observational levels from the surface to a depth of 150 meters, were occupied in the immediate vicinity of an iceberg off the Straits of Belle Isle. Twenty-four additional stations were occupied, from the surface to as near bottom as was practicable, between July 24 and July 29. These last were disposed in the form of a section extending from South Wolf Island, Labrador, to Cape Farewell, Greenland. A list of 267 sonic soundings taken along this section during the 1940 and 1941 post-season cruises have been corrected, tabulated, and supplied to the U. S. Hydrographic Office. Other incidental data collected, both during the season and post-season cruises, consisted of barograms and sea-water surface thermograms. The reversing thermometer temperatures were supplemented by bathythermograph observations through cooperation with the Woods Hole Oceanographic Institution. It is interesting to note the almost complete absence of ice in the vicinity

of the Grand Banks of Newfoundland in 1941.

Another cooperative project undertaken jointly with the Woods Hole Oceanographic Institution is the preparation of a batch of standard seawater. It is expected that, by the time this review appears, the standard water will be ready for distribution.

The results of the scientific work of the 1941 Ice Patrol season will be published in U. S. Coast Guard *Bulletin* No. 31.

Tide Observations and Hydrographic Surveys.—Along the coast from Maine to Florida, 26 primary tide stations were maintained in operation by the Coast and Geodetic Survey for the purpose of hydrographic control, tidal research, and determination of changes in sea level. Oceanographic activities in offshore areas were subordinated during the year to more urgent surveys of inshore areas required for national defense. A complete survey of Casco Bay, Me., and its approaches was in progress, including wire-drag examination of a large portion of the area. About 200 miles of wire-drag work were accomplished in other areas along the New England coast. Detailed hydrographic surveys were made in the James River, Va., and in the Indian River area of Florida.

The Hydrographic Office of the United States Navy conducted hydrographic surveys in Venezuelan waters.

The Woods Hole Oceanographic Institution completed four biological surveys of the Georges Banks area. This work was a continuation of the surveys made during the previous spring and constitutes part of a long term investigation of the factors influencing the survival of young haddock.

During the summer several series

of deep water samples were collected for chemical analysis. Of particular interest are some 40-gallon samples which are being studied for their radium content. In July a cruise was devoted to a further investigation of the submarine geology of the continental slope.

The oceanographic field work was much curtailed during the year owing to work on national defense.

PACIFIC OCEAN

Hydrographic Surveys.—Detailed revision surveys were in progress during the year in San Francisco Bay and in the northern reaches of Puget Sound by the Coast and Geodetic Survey. In southeastern Alaska hydrographic surveys were accomplished in the vicinity of Sitka and in Yakutat Bay. In southwestern Alaska, surveys were made in the vicinity of Kodiak Island, in Cook Inlet, and in Cold Bay. Extensive surveys were continued in the Aleutian Islands westward to Atka Island.

The Hydrographic Office of the United States Navy completed the survey of the Guayas River, Ecuador, and approaches.

Over 100,000 sonic soundings taken by vessels of the United States Navy and Merchant Marine while en route over previously unsounded areas, were received by the Hydrographic Office during the year and will be charted. The project for evaluating ocean-current and sea-surface temperatures for all oceans of the world, covering a 30-year period, was completed.

The preparation of a new chart and pilot of Antarctica, utilizing data gathered since Wilkes' discovery of that continent, inclusive of the work done by the United States Antarctic Service, is rapidly approaching completion. The chart will be shaded to show the bathymetry.

Tide Observations.—Fourteen primary tide stations were maintained in continuous operation by the Coast and Geodetic Survey from California to Alaska and one in Honolulu. In addition to furnishing the necessary

data for hydrographic surveys, the results of these observations are of basic importance in tidal research and in the determination of relative changes in elevation of land and sea.

The *E. W. Scripps*, the research vessel of the Scripps Institution of Oceanography, conducted six cruises off the coast of southern California in cooperation with the United States Fish and Wildlife Service as a continuation of the cooperation which started in 1939. On the cruises ordinary oceanographic observations were made and the distribution of sardine eggs and larvae were examined. By continuing this work it is hoped to obtain information as to the factors which influence the success of spawning. Since July, the *E. W. Scripps* has been placed entirely at the disposal of the University of California Defense Research Project at the United States Navy Radio and Sound Laboratory on Point Loma.

In the Institution's laboratories at La Jolla the numerous data and collections obtained from the cruises off the coast of southern California and from the Gulf of California have been analyzed and partly discussed. Besides this work, surface observations from the Pacific Ocean have been examined and experimental studies have been conducted, particularly in the fields of marine bacteriology, biochemistry of marine organisms, and physiology of fishes.

Papers published by the staff and visiting scientists are quite extensive and titles may be had upon application to the Scripps Institution of Oceanography at La Jolla, Calif.

The Oceanographic Laboratories of the University of Washington have continued their investigations of the various constituents of sea water and methods of exact analysis. Considerable attention has been given to the radium content of ocean-bottom sediments along the western coast of North America from the Columbia River to Point Barrow.

Several professional papers have been published by the staff of these laboratories, the titles of which may be obtained by writing to the Ocea-

COGNATE SOCIETIES AND RESEARCH INSTITUTIONS

nographic Laboratories, University of Washington, Seattle, Wash.

GULF OF MEXICO

Basic hydrographic surveys were continued eastward of the Mississippi River Delta by the Coast and Geodetic Survey. A submarine canyon over 13 miles in length, located about 60 miles southeastward of Pensacola, was developed in sufficient detail for accurate charting. This canyon averages about 1000 feet deeper than the surrounding depths.

THE AMERICAN GEOPHYSICAL UNION

The annual meeting was held in Washington, D. C., from April 30 to

May 3. The papers given for the Section of Oceanography presented a review of the activities of the year of the various Federal and educational institutions engaged in oceanographic work. In addition there were papers presented on fine structure of the edge of the Gulf Stream; the summertime vertical humidity-gradient over the cold water of the San Juan Archipelago; and summary of some results of internal-wave investigations in the North Atlantic. These papers are published in the *Transactions* of the American Geophysical Union for 1941, and may be obtained from the National Research Council, The National Academy of Sciences, Washington, D. C.

PERIODICAL PUBLICATIONS

American Mineralogist

U.S. Geological Survey, Washington, D.C.

Economic Geography

Clark University, Worcester, Mass.

Economic Geology

University of Illinois, Urbana, Ill.

Geographical Review

American Geographical Society, Broadway and 156th Street, New York City.

Journal of Geography

3333 Elston Ave., Chicago.

Journal of Geology

5750 Ellis Ave., Chicago.

Journal of Terrestrial Magnetism and Atmospheric Electricity

Johns Hopkins Press, Baltimore, Md.

Mining and Metallurgy

29 West 39th Street, New York City.

National Geographic Magazine

National Geographic Society, Washington, D.C.

Nature Magazine

295 Madison Ave., New York City.

Petroleum World

412 West Sixth Street, Los Angeles, Calif.

Transactions of the American Geophysical Union

5241 Broad Branch Road, N.W., Washington, D.C.

Travel

116 East 16th Street, New York City.

Travel America Guide

222 East 42nd Street, New York City.

COGNATE SOCIETIES AND RESEARCH INSTITUTIONS

(For further information, the reader may address the following organizations)

AMERICAN ASSN. OF PETROLEUM GEOLOGISTS, Box 1852, Tulsa, Okla.

AMERICAN GEOGRAPHICAL SOCIETY, Broadway at 156th St., New York City.

AMERICAN METEOROLOGICAL SOCIETY, Blue Hill Observatory, Milton, Mass.

APPALACHIAN MOUNTAIN CLUB, 5 Joy St., Boston, Mass.

XX. GEOPHYSICAL SCIENCES

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| ASSOCIATION OF AMERICAN GEOGRAPHERS, University of Pennsylvania, Philadelphia, Pa. | OCEANOGRAPHIC LABORATORIES, University of Washington, Seattle. |
| EXPLORER'S CLUB, 10 W. 72nd St., New York City. | SCRIPPS INSTITUTION OF OCEANOGRAPHY, La Jolla, Calif. |
| GEOLOGICAL SOCIETY OF AMERICA, 419 W. 117th St., New York City. | SEISMOLOGICAL SOCIETY OF AMERICA, University of California, Berkeley, Calif. |
| NATIONAL GEOGRAPHIC SOCIETY, 1146 16th St., Washington, D.C. | WOODS HOLE OCEANOGRAPHIC INSTITUTE, Woods Hole, Mass. |

DIVISION XXI

CHEMISTRY AND PHYSICS

PHYSICAL CHEMISTRY

BY HUGH S. TAYLOR
PROFESSOR, PRINCETON UNIVERSITY

GENERAL

The second year of warfare on a world-wide scale has still further reduced the ranks of workers in physical chemistry so far as publication of results of research is concerned. Even in the United States the withdrawal of men into the program of national defense has had, as a result, a diminution in volume of research published, notably in some of those centers from which important researches issue. Until normal times are once more established this condition may be expected to persist and become even more pronounced.

ISOTOPES

Clusius has applied his thermal diffusion-convection technique (*Z. physik. Chem.*, B48, 50, 1941) to the separation of 2 liters of each of the neon isotopes of masses 20 and 22 and has also 2 liters of a gas containing 2.5 per cent of the rare neon isotope of mass 21. Nier and Bardeen (*J. Chem. Phys.*, 9, 691, 1941) use a 74-foot long column to produce 150 milligrams per day of a methane gas in which the ^{13}C has been enriched 11.5 times over the normal concentration of heavy carbon (1.1%). Power consumption is 6.5 k.w. In Urey's laboratory Kirshenbaum (*J. Chem. Phys.*, 9, 660, 1941) has compared the vapor pressures of liquid natural nitrogen with that containing 34.6 per cent of $^{15}\text{N}_2$. He computes that the heat of vaporization of pure $^{15}\text{N}_2$ should be 3.27 calories higher than that of natural nitrogen.

Heavy nitrogen has been used to study mechanism of surface reactions on osmium catalysts (*ibid.*, 9, 287, 1941). A Japanese report that nitrogen gas would readily exchange with nitrates, nitrites and hydroxylamine, has been proved incorrect by work with radioactive nitrogen (*ibid.*, 9, 726, 1941) and with the stable heavy isotope (*ibid.*, 9, 775, 1941). Braune has used the isotopic gases, $\text{HC}1$ and $\text{DC}1$ to study the self-diffusion of gases (*Z. physik. Chem.*, B49, 247, 1941) and has confirmed the detailed kinetic theory of diffusion processes especially as to the influence of "hard" and "soft" molecules and their interactions on the diffusion phenomenon in gases.

THE ELECTRON MICROSCOPE

The development of the electron microscope has led to applications in the field of physical chemistry which indicate an important future for this new scientific tool. The book by Manfred von Ardenne, *Electron Super-microscopy*, appeared in German late in 1940, and has been followed by a number of articles in which the scope of the instrument has been indicated. Resolutions up to 30 Ångstrom units are attainable and this permits direct observations on materials which hitherto could only be examined by indirect methods. Thus, photographs of smoke particles (*Naturwiss.*, 28, 248, 1940) show that, in the case of zinc and magnesium oxides, even the finest particles are respectively composed of minute needle-like and cubic

crystals which are aggregated in such a way that apparently the component crystal units have coalesced one with another on collision to form filamentary structures rather than clumps of material. Carbon black smokes are on the other hand often composed of spherically shaped particles aggregated into filaments or clumps. In an examination of catalysts by the electron microscope, Ardenne and Beischer (*Z. angew. Chemie*, 53, 103, 1940), photographs were taken of colloidal metals, catalyst support materials, and supported catalysts. With, for example, colloidal platinum, it was possible to observe directly the size-distribution of the particles with the aid of photographs requiring only a few minutes to obtain, whereas other indirect methods of securing such data are time-consuming and much less certain. Protective colloids used in the preparation of such colloidal catalysts were shown to exert a definite influence on the shape of the particles, producing in a given case fiber-like structures. The mean size of particles proved to be 100-200 Å.U. in diameter with finer material down to 50 Å.U. Similar size distributions are observable in nickel, iron oxide, and vanadium pentoxide catalysts. An alumina gel catalyst and silica gel showed fiber-structure at the edges of the aggregates, the fibers 30-100 Å.U. thick. This fiber-structure is doubtless characteristic of the whole mass. As an example of supported catalysts, palladized asbestos was studied. In use the clean smooth fibers of asbestos become rough, doubtless due to the exit of water vapor from the mass. The palladium is distributed over the fibers in isolated aggregates ranging from 70 to 1000 Å.U.

The use of the electron microscope in the examination of synthetic polymers is illustrated by the work of Ardenne and Beischer (*Z. physik. Chem.*, B45, 465, 1940) on β -polyoxymethylene. The material reveals fiber-bundles 50 to 100 Å.U. in diameter. Work on rubber latex, natural and synthetic rubber by the same authors (*Kautschuk*, 16, 55, 1940) reveals the individual particles (100-200 Å.U.) in

the latex. Films of rubber were transparent, but latex films showed fiber structure. The electron microscope was revealed as a useful tool for controlling uniformity of rubber mixings and for the study of relations between fine structure and mechanical properties.

In a later paper (*Z. Physik*, 117, 657, 1941), Ardenne describes a 200 kilovolt electron microscope. The higher potential, while not changing materially the resolution, permits the penetration of thicker layers of material, and improves light- and dark-field as well as stereoscopic electron microscopy. With this machine photographs of diatoms revealed the detailed structure much more definitely than was possible with the earlier machines using 60 and 140 kilovolt electrons. The higher tension permits also the photography of low-melting organic compounds without destruction of crystal form.

Electron and X-ray examination by Hess and his co-workers (*Z. physik. Chem.*, B49, 64, 1941) of the degradation of cellulose by grinding reveals that, in addition to the production of individual fibrils 100-200 Å.U. in diameter, there is chemical change which occurs within the molecular constituents of the material changing such properties as solubility.

A number of accounts of progress by the Radio Corporation of America in the development of their electron microscope appeared during the year (see, for example, T. A. Smith, *Scientific Monthly*, p. 337, April 1941). Machines are being delivered to various industrial organizations. Many biological applications have already been made. Anderson and Stanley have photographed the individual molecules of the tobacco mosaic and bushy stunt viruses, and, at the American Philosophical Society in April, Stanley showed photographs of a chemical reaction, the clumping of these viruses when treated with their appropriate anti-body (W. M. Stanley, *Sci. Monthly*, 197, Sept. 1941). Marton, McBain, and Vold have used the electron microscope (*J. Am. Chem. Soc.*, 63, 1990, 1941) to study soap curds. A

curd of sodium laurate is a mass of fibers which are thin ribbons whose widths tend to be integral multiples of twice the length of the sodium laurate molecules. The fibers branch to form a felt, the fiber junctions give rise to capillary spaces in which water can be retained even at low relative humidity. There are also granules present 100-200 Å.U. in diameter as well as fibers.

ATOMIC MODELS OF MOLECULES

Paralleling the work arising from the increased resolution of the electron microscope there has been additional activity in interpreting the behavior of large molecules by a study of molecular models constructed on the basis of electron diffraction and X-ray analyses from scaled model atoms. The Fisher-Hirschfelder type of atoms were employed by Scattergood and Pacsu (*J. Am. Chem. Soc.*, 62, 903, 1940) to examine the properties of the sugar derivative, d-glucopyranose. The method of study was extended by Caesar and Cushing (*J. Phys. Chem.*, 45, 776, 1941) to a study of cellulose and amylose, a constituent of the starch molecule. The spatial relationships of the primary alcohol groups in cellulose and amylose were especially studied. In the latter the groups twist spirally around the axis of the chain molecule at a uniform spacing of about 4.5 Å.U., whereas in cellulose the corresponding spacing is about 7.5 Å.U. It is concluded that the strength and effectiveness of the associative forces should accordingly be much greater between chains of amylose. The starch molecule may be thought of as a twisted rope-like structure, the rope being coiled in the form of a helix.

Work of an entirely parallel nature in the field of the protein fibers such as those of hair and muscle is also reported (*Proc. Am. Phil. Soc.*, 85, 1, 1941). The Fisher-Hirschfelder model has been improved by the use of snap-fastener attachments for single bonds of the individual atoms in place of the tapered-peg attachment of the commercial units. This increases stability and ease of manipulation of the

models. Study shows that there are many methods of folding of polypeptide chains, of which fibrous proteins are composed, and that some of these conform to the best available X-ray data on such structures. In particular a spiral fold in which a side-chain occurs regularly at angles of 120° with the central axis of the fold gives accurately the spacing characteristics demanded by the normal hair or α -keratin structure. There is a repeating unit every 5.1 Å.U. On stretching, it extends about 100 per cent to the extended or β -keratin structure in agreement with the behavior of hair fibers. Other proposals were put forward during the year, notably one by Astbury (*Nature*, 147, 696, 1941), which more or less conform to present knowledge. There are, it would seem, many alternative possibilities to which further consideration must be given. Silk, which has the extended β -peptide structure has small side chains for the most part. This elucidates the greater degree of orientation of silk fibers, their greater degree of crystallinity, their greater tensile strength, and at the same time their absence of elasticity. The synthetic fibers, such as nylon, can be analysed also by the atomic-molecular models. The models are finding increasing applicability in the study of complex organic structures such as the sterols, hormones, vitamins, plastics, and detergents. Black and Dole (*J. Chem. Education*, 18, 424, 1941) have recently published pictures of models of the nylon chain and of the sex hormones constructed by a snap-fastener technique.

In a field which was discussed at some length in the 1940 report, there is further progress. New evidence continuously arises that there is a small but definite hindrance to free rotation around single carbon-carbon bonds. During 1940 there was evidence that the two configurations possible in substituted ethanes are not *cis* (eclipsed) and *trans* (staggered) configurations but two staggered forms, the one the *trans*, the other a staggered configuration intermediate between *cis* and *trans* and labelled *C₂* or *gauche* (see *J. Chem. Phys.*, 9, 375,

826, 1941). Whatever the final decision in the matters at issue it is comforting to note that, in one case at least, namely, 2, 2, dimethyl butane, the three proposed configurations, *cis*, *gauche* and *trans*, are all equivalent to one another. Its Raman spectrum is practically the same in the liquid and solid state, whereas with many hydrocarbons which could take up alternative configurations there is a disappearance of Raman lines on solidification.

FLUORESCENCE AND PHOSPHORESCENCE

New methods of illumination and the perennial problem of photosynthesis give interest to new studies of fluorescence and phosphorescence. In the case of dyestuffs the problem has recently been re-analysed by Franck and Livingston (*J. Chem. Phys.*, 9, 184, 1941). The phosphorescent state is interpreted as the electronic ground state of a reactive energy-rich form of the normal dyestuff molecule. This can return by a heat-absorbing process to the electronically excited state of the normal molecule which then can emit the phosphorescent light, which, as frequently observed, would therefore be weakly temperature sensitive. The same reactive energy-rich form would enter into dye-sensitized photo-reactions. These views are applicable, according to Franck and Livingston, to the rapid reversible bleaching and other known photochemical and optical properties of chlorophyll. The problem of photosynthesis has received extensive discussion by Franck along these lines in *Advances in Enzymology* (Interscience Publishers, New York, 1941).

G. N. Lewis and his co-workers (*J. Am. Chem. Soc.*, 63, 3005, 1941) approach the problem from studies of the behavior of dyestuffs, particularly fluorescein, dissolved in super-cooled glassy media, as, for example, boric acid glass. Lewis distinguishes two processes, α and β , the α -process (blue light) similar to that discussed above and temperature sensitive, the other, of lower frequency (yellow light) less

dependent on, if not independent of, temperature, predominating therefore at low temperature and involving a single stage return to the normal ground state of the molecule. The temperature sensitivity of the α -process was measured and corresponds exactly with the difference in energies of the α - and β -phosphorescences, giving quantitative support to the assumed mechanism of the α -process. The experimental technique permitted the conversion of more than 75% of the dyestuff to the phosphorescent state, in large enough concentration that its molecular properties (*e.g.*, its absorption spectrum) could be studied. The glassy solvent is responsible for the phosphorescence, since in liquid solutions the dyestuff only shows fluorescence. The glassy solid maintains the dyestuff molecules in a definite orientation which does not change on excitation. Those molecules are readily excited whose optical axes lie near the plane that is normal to the exciting light. These glassy solutions show the phenomenon of dichroism even though the solvent is homogeneous and isotropic. The dichroism disappears after extinction of the exciting light.

In a recent note, Lewis and Lipkin (*ibid.*, 63, 3232, 1941) extend the glassy solvent technique to the preparation of free radicals by ultraviolet illumination of the parent substances dissolved in a rigid solvent. From tetraphenyl hydrazine in a solvent rigid at 90°K. radicals are formed on illumination which are stable for a week or more. The radicals combine instantly when the glass is raised 10° in temperature if, in that interval, the solvent becomes fluid. Lewis and Lipkin conclude from this that the activation energy of recombination can not, therefore, be more than about 1 kcal. in contrast to estimates based on some photo-kinetic studies that energies of activation of 8-30 kcal. may be needed for such recombination processes among radicals.

PHOTO-REACTIONS

The classical reaction of photochemistry is the hydrogen-chlorine

PHYSICS

combination. Discovered by Cruickshank in 1801, it has been the objective of an enormous amount of experimental work by Draper (1841-45), Bunsen and Roscoe (1855-59), by Chapman and co-workers (1906 onwards) and by Bodenstein practically continuously since 1913. Numerous other workers have expended many research-men-years on the problem. The title of Bodenstein's most recent contributions in this field is distinguished not only for its content but for the optimism displayed in the titles: *Abschlussarbeiten am Chlorknallgas*, I, II and III. One has wondered whether this reaction will ever have *Finis* written across its record. Perhaps after 28 years devotion to its study Bodenstein's confidence may be understood, or pardoned, whatever the future may reveal. In these latest publications Bodenstein is concerned with the detailed reactions of this prototype of chain reactions. The atomic chain first suggested in 1916 by Nernst (recently deceased) is now

accepted generally. Bodenstein defines the relative importance of individual chain steps, $H + Cl_2 = HCl + H$ being 250 times more important at room temperature than $H + HCl = Cl_2 + H$, which latter had been suggested as operative in the detailed mechanism and now shown to be of negligible importance. The third article deals with the chain-breaking process brought about by oxygen. Articles are promised on the absolute velocities of the individual steps and on a unified treatment of the many diverse results from different laboratories. Such a program would be a fitting final achievement of the 70-year old dean of kineticists, Bodenstein.

The pattern of the hydrogen-chlorine reaction is being imitated in other photo-reactions. The photolyses of acetone, acetaldehyde, and azomethane have now each their sizable literature, and the 1941 quota is not inconsiderable and is (if one may use the adjective) illuminating.

PHYSICS

BY THOMAS H. OSGOOD

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GENERAL

The volume of research in physics which is at the present time being carried on in this country is undoubtedly greater than it has ever been. A large proportion of this is in the field of applied physics, in connection with the general defense program. Much of the work of this type will find its way into the literature slowly, if ever; but there still continues a steady stream of new work in the realm of pure physics, work which does not at the moment appear to have any immediate value for offensive or defensive purposes.

COSMIC RAYS

The flying particles known as cosmic rays and which bring perhaps 1,000,000 horsepower to the surface of the earth from outer space, can now

be described in a much more logical fashion than heretofore. As a result of experiments which measure their intensity by automatic recorders carried by balloons to such heights that 95 per cent of the atmosphere is below them, Schein, Jesse and Wollan (*Phys. Rev.* 59, 615) have come to the conclusion that the primary particles impinging on the top of the earth's atmosphere are fast-moving protons of great penetrating power. A similar deduction has been made by Swann (*Phys. Rev.* 59, 770) on the basis of investigations carried out by himself and his colleagues at the Bartol Research Foundation. The particles which are observed most commonly at much lower altitudes are, however, not protons; many of them are electrons which can be absorbed by a few inches of a heavy metal like

lead. These constitute the soft component of the radiation. Others, constituting the hard component, are mesotrons, which can penetrate easily through several feet of lead. A transformation must therefore occur on the way. It must be remembered that mesotrons, particles about 180 times as massive as electrons, are unstable; they decay to electrons and neutrinos within a few millionths of a second after their first creation. Therefore they can not be the primary particles, for they would have decayed on their long journey through space before ever reaching the earth.

Although the consequences of these ideas have not yet been fully worked out, the chain of processes involved is believed to be as follows. The protons falling on the fringes of the atmosphere create mesotrons there, in a manner at present unknown. These mesotrons, inheriting some of the momentum of the protons, have a general downward velocity, and after travelling through the air, disintegrate into electrons and neutrinos. The experiments on cosmic rays which have been performed during the last ten or more years bear out this theory in a qualitative way, but it is not yet to be considered final.

On the behavior of mesotrons hangs the whole truth of the above theory. Rossi and Hall (*Phys. Rev.* 59, 223) point out that, according to the theory of relativity, moving particles should disintegrate at a rate which differs from that for similar particles at rest. The test of this effect involves the resolution of cosmic-ray mesotrons into a velocity spectrum, which can not yet be accomplished in any but the roughest manner. Nevertheless, Rossi and Hall were able to show that slow-moving mesotrons have a shorter expectation of life than fast-moving ones, so that the relativity effect receives a good qualitative confirmation.

Rasetti, too (*Phys. Rev.* 60, 198) has gathered experimental evidence concerning the interaction between mesotrons and matter. His experiments with counter tubes "seem to indicate a number of disintegrating electrons per mesotron definitely

smaller than unity. The results, however, are in agreement with the assumption that only half of the mesotrons undergo free decay. Since the analysis of mesotron tracks in a magnetic field has shown that there are about as many positive as negative mesotrons, or a small excess of positive, the result found is what should be expected if only mesotrons of one sign (positive) undergo free decay." There is some theoretical support for this conclusion; calculations made by Tomonga and Araki in Japan suggest that positive mesotrons alone undergo free decay, while the negative ones interact more readily with nuclei, raising them to excited states from which they decay by beta-processes.

FISSION OF URANIUM AND THORIUM

New ways have been found of accomplishing the fission of heavy atoms. From the University of Rochester, Dessauer and Hafner (*Phys. Rev.* 59, 840) report the fission of uranium and of thorium by protons. In their principal experiments, they allowed a beam of 6.9 Mev protons from a cyclotron to fall on a 10-mil sheet of thorium, which was too thick to be penetrated either by the proton beam or by fission fragments. If protons caused fission, therefore, only the front face of this 10-mil thorium sheet could release fission fragments. It was necessary, however, to anticipate the possibility that the impinging protons might cause a proton-neutron reaction in the heavy metal. The neutrons thus created would, of course, be able themselves to cause fission. However, since neutrons can penetrate even such a heavy metal as thorium with some ease, any neutron-induced fission would take place almost anywhere in the 10-mil thorium sheet. As a result, if the fission in this experiment was a secondary process due to the incidental creation of neutrons, then fission products could be collected not only from the front of the thorium sheet, but also from the back. Dessauer and Hafner found that no fission fragments emerged from the back of the 10-mil thorium sheet, but

from the front there came recoiling fragments which could be collected on a suitable aluminum foil placed a short distance away. As might be expected, the decay-curve of the recoil fragments caught on the aluminum foil was such as to indicate the presence of many different periods. The threshold energy for thorium fission by protons was found to be at 5.8 Mev.

Since the specific charge of alpha particles is only half that of protons, it would not be reasonable to expect the former to be able to enter the nuclei of heavy atoms unless their energies were considerably in excess of the threshold quoted above for protons. The potential barrier of a uranium atom, for an incident alpha particle, is estimated to be nearly 30 Mev, an energy which happens to be within the range of the 60-inch cyclotron of the Crocker Radiation Laboratory. Using this instrument, Fermi and Segrè (*Phys. Rev.* 59, 680) bombarded ammonium uranate with 32 Mev alpha particles, finding among the products several tell-tale isotopes of iodine and tellurium which definitely established the fission of uranium by this bombarding agent. Thus the list of projectiles able to cause fission now includes all the simple massive particles—neutrons, deuterons, gamma rays, protons, and alpha particles.

When neutrons of energy less than 10 Mev are used to bombard uranium, the resulting fission fragments all have atomic numbers between 35 and 57, but none occurs with atomic numbers 44 to 50 inclusive. This unsymmetrical fission will undoubtedly have important theoretical implications, particularly in conjunction with the recent experimental findings of Nishina, Yasaki, Kimura, and Ikawa (*Phys. Rev.* 59, 323). These authors find that, with increased neutron energy, the fission may take place in a more symmetrical manner, though the proportion of symmetrical fragments is relatively small even with the 17 Mev neutrons from the $\text{Li}(d,n)\text{Be}$ reaction. Many new fission products were identified, and now the only element of

atomic number 35 to 57 inclusive not yet reported among the fission fragments is Sn (50).

ISOTOPES

Carbon is so abundant an element in the universe and plays so important a part in living organisms that new information about its isotopes is relished by physicists and biologists alike. This element has two stable isotopes, C^{12} and C^{13} , whose abundances are 98.9 and 1.1 per cent. Dividing the larger of these numbers by the smaller it is easy to show that C^{12} is 90 times as abundant as C^{13} . A mass-spectrometer study of the relative abundances of C^{12} and C^{13} recently completed by Murphey and Nier (*Phys. Rev.* 59, 771) discloses, however, that the $\text{C}^{12}/\text{C}^{13}$ ratio varies from 89.2 to 93.1, depending on the source of the carbon. There is no doubt that limestones, whatever their ages, give low values; that carbon from plants is unusually rich in C^{12} ; and that in meteoric carbon intermediate values occur. But it is too early yet to hazard an explanation of the significance of the variations.

Of the radioactive isotopes of carbon, the most useful, as far as applications to other fields of science are concerned, is C^{14} , an unstable atom which decays by emitting beta particles (Ruben and Kamen, *Phys. Rev.* 59, 349) of energy about 145 kev. It can be manufactured with deuterons according to the reaction $\text{C}^{13}(d,p)\text{C}^{14}$ or by the action of slow neutrons on nitrogen, $\text{N}^{14}(n,p)\text{C}^{14}$. The beta particles, having a range of nearly 20 mg/cm² in aluminum, equivalent perhaps to 0.2 mm of plant tissue, are energetic enough to be detected by Geiger counters even if produced in moderately thick specimens. The period is so long that no appreciable decay has been detected in a preparation nine months old. Ruben and Kamen estimate the half life to be between 10^3 and 10^5 years. Hence this C^{14} isotope should prove very useful for tracer work in living organisms.

Nearly all elements absorb slow neutrons to some extent, but certain materials absorb them to an astonish-

ing degree. Cadmium, for example, has been known for several years to absorb them so well that thin sheets of this metal are often used as barriers to prevent the passage of neutrons. The process is, of course, one of nuclear absorption, and when it takes place as readily as in cadmium, it is known as a resonance process. Cadmium has eight stable isotopes altogether, and it is a matter of some interest to theoretical physicists to know which isotope displays the resonance phenomenon; some may and some may not. Baker and Bacher (*Phys. Rev.* 59, 332) have carried out careful experiments with slow neutrons, and have fixed the resonance point at 0.14 electron volt. It seems probable that this resonance is due either to Cd^{111} or to Cd^{113} , which are present in ordinary cadmium to the extent of only 13 and 12.3 per cent respectively.

INDUCTION ACCELERATOR

A powerful new tool for the acceleration of electrons to high energies is in process of development in the Research Laboratories of the General Electric Co., after a first model was proved successful in operation by Kerst (*Phys. Rev.* 60, 47) at the University of Illinois. It is known as the Induction Accelerator. It should be pointed out that the cyclotron, which is firmly established as an accelerator of heavy positive ions, is not suitable for accelerating electrons, which are some thousands of times lighter than the ions. The reason is that electrons reach such high velocities that their masses would increase enough to throw them completely out of phase in the cyclotron dees.

The performance of the induction accelerator depends on the fact that when a magnetic field is changing, an emf is generated in a loop of wire surrounding the space occupied by the field. The emf is present, indeed, whether the wire is there or not. Kerst built first an electromagnet excited by a 600-cycle current, with pole pieces about a foot in diameter. Electrons are generated thermionically at an appropriate place in a vacuum

chamber between the poles, and are accelerated in practically circular orbits between the poles until they strike a target. During the 1/2400 sec., which is required for the field to rise to its maximum value, there is time for the electrons to make perhaps 100,000 revolutions, during each of which there is a gain in energy of some 25 electron volts. The magnetic field between the magnet poles is not meant, at any instant, to be uniform. It must vary radially in such a way that electrons which happen to be circling a little too far out or a little too far in are brought quickly back to the proper orbit. To find out how the ring of moving electrons is finally made to deviate from this orbit and strike a target, the reader must turn to the original paper. We can merely indicate that it is accomplished by having certain parts of the poles reach saturation before others. The design of the magnet controls the success or failure of the instrument. Currents to the target in the Illinois instrument are about one thirtieth microampere at 2.3 million electron volts. An energy five times as great has already been attained with the General Electric model. The induction accelerator is a promising source of high energy photons as well as electrons, and it may soon be possible to duplicate some low-energy cosmic ray phenomena under controlled conditions in the laboratory.

A giant cyclotron is now under construction at the University of California at Berkeley. Dwarfing its predecessors, it will be sheltered by a building 160 ft. in diameter. The steelwork for this is already in place, the great magnet, fabricated out of 2" steel plate, having been built in position first. Two more years are expected to pass before the machine is ready to work. The magnet itself contains 3700 tons of steel, fashioned into a rectangular frame about 50 x 25 ft. The two poles are to have a diameter of 184 inches, with an air gap of 40 inches to accommodate the accelerating chamber. The equipment is designed to produce deuterons of 70 Mev energy at first, and it is antici-

pated that this can later be raised to 100 Mev. At this latter energy the magnetic field required will be 10,000 oersteds, and the oscillator providing the dee voltage will operate at a wavelength of 40 meters.

X-RAYS

Readers of technical papers on X-rays and crystals have, during the past year, found the pages enlivened by a spirited argument concerning the phenomenon of diffuse scattering of the rays by crystals. Spots and streaks which do not fit into a Laue pattern have been observed for many years, but they have usually been passed off rather lightly as due to irregularities of the individual crystal. Only recently have experiments been devised which accentuate the intensity of these anomalous reflections. Good examples of these are found in papers by Gregg and Gingrich (*Phys. Rev.* 59, 619), and by Jauncey and Baltzer (*Phys. Rev.* 59, 699), to mention only two sources. The majority of workers explain these spots, which occur frequently close to the regular Bragg reflections, in terms of a theory of Zachariasen (*Phys. Rev.* 59, 860), but there is a notable Indian school of dissenters (Raman and Nilakantan, *Phys. Rev.* 60, 63). The last mentioned explain the anomalous spots as due to a modified or quantum reflection, in which the primary X-ray frequency is altered by the addition or subtraction of one or another of the characteristic infra-red frequencies of the crystal. There seems, however, to be some doubt whether the Indian authors have been able to offer a convincing proof of the change in frequency which is a basic part of their theory. Curiously enough, the formulas which all workers give, in an approximate form, are identical. The argument concerns merely the interpretation of the unusual reflections.

The solution of the puzzle appears to be fairly simple. Lonsdale (*Nature*, 147, 481) points out that the reason why many different assumptions give, in the various theories, the same formula for the displacement of the anomalous spot from the center of the

Bragg reflection, is that in the derivation of the formula it is assumed that the spreading of the intensity of reflecting power around each reciprocal lattice point is independent of direction. The simple formula usually quoted is just a geometrical way of expressing the fact that near the reciprocal lattice points the distribution is spherical. Actually, at greater distances the distribution is far from spherical, though the actual shape is not known. Even Raman's more general formula is simply a way of expressing a geometrical relationship. The interpretation of the observations according to one theory or the other is therefore a matter of choice, for it cannot prove that any one is to be preferred. What is needed is more information concerning the effects of elasticity, crystal perfection, temperature, etc. on the positions of the anomalous spots; and some increase in accuracy, for at the moment of writing the agreement of calculated with observed positions is termed excellent when no difference greater than five or 10 minutes of arc is found.

MISCELLANEOUS

Only brief mention can be made of some subjects which showed considerable development during 1941. The electrical failure of crystals and other insulators under the influence of intense electric fields is of importance in applied physics. Von Hippel and his colleagues (*Phys. Rev.* 59, 824) have shown that Townsend's theory of ionization by collision can be extended to give a qualitative explanation of the breakdown of amorphous and crystalline substances, and that current theories are quantitatively inadequate. Millman and Kusch (*Phys. Rev.* 60, 91) have used radio-frequency spectra to make determinations of the magnetic moments of the proton and of the Li^7 nucleus with far greater accuracy than before, and since their method leads indirectly to the moment of the neutron, any new direct measurement of this particle's magnetic moment would be welcome. Anderson (*Jour. Opt. Soc. Am.* 31, 187) published the final results of his

determination of the velocity of light by a purely automatic method. In this experiment the only personal error that can affect the final result occurs in the measurement of the photographic records which are made. He gives the velocity of light as $299,776 \pm 14$ km/sec, which is very close to one, but not to all, of the experimental results published under the late Professor Michelson's name. From Russia have come two short papers (Kapitza, Landau, *Phys. Rev.* 60, 354, 356) on the extraordinary behavior of liquid helium when its tem-

perature is below the λ -point at 2.19°K. The liquid has a viscosity which, when measured by conventional methods, is lower than that of gaseous hydrogen, and when subjected to a temperature gradient, it transports heat at so high a rate that classical theories of conduction and convection are obviously entirely inapplicable. The problem here is of a nature which typifies the progress of modern physics; experimental and theoretical developments go hand-in-hand, each acting as a gentle spur to the other.

ORGANIC AND INORGANIC CHEMISTRY

By C. M. SUTER

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LEAD STORAGE BATTERY REACTIONS

Although the lead storage battery has been in use for many years, the chemical reactions that take place on charge and discharge are still not entirely clear. Clark and Rowan (Univ. of Illinois) have investigated the nature of the changes that occur by the radioactive indicator method. Thorium-B is an isotope of lead that is radioactive, and by mixing this with the lead on one plate of the storage cell and determining where the radioactivity was after a charge or discharge, any migration between plates could be detected. It was found that there was no transfer of lead during either charge or discharge even from one part of a plate to another part. The only lead in the electrolyte was due to particles of lead oxide or sulfate that had flaked off the plates, and this lead was not in solution and settled out upon standing. The results of the investigation are in accord with the double-sulfation theory of storage battery discharge and contrary to the LeBlanc theory that assumes lead ions are present in the solution during charge and discharge. In a study of the properties of various lead oxides a new oxide was detected by X-ray measurements, but its exact composition was not determined.

CHEMISTRY OF THE RARE EARTH ELEMENTS

The separation of rare earth elements is tedious by most processes because of the similarity of the compounds of these elements. Young, Arch and Shyne (Mass. Institute of Technology) have found that a mixture of lanthanum and neodymium bromides can be largely separated in one operation by the difference in their reaction rates with ethyl benzoate. The neodymium bromide reacts so much faster that from a mixture of equimolal amounts of the two bromides it was possible to obtain 25% of the neodymium having a 95% purity. Further investigations on this type of separation are in progress. Appleton and Selwood (Northwestern Univ.) have investigated the possibility of separating lanthanum and neodymium by fractional partition of their thiocyanates between water and *n*-butyl alcohol. The neodymium salt tended to concentrate in the water layer with an enrichment factor of 1.06. With the proper continuous extraction equipment, this might be sufficient to give a useful separation of the two elements.

The preparation of amalgams of europium and ytterbium has been reported by McCoy. These were obtained by electrolysis of aqueous solu-

tions containing the acetates of the rare earths and potassium citrate. A satisfactory alternative was to treat such a solution with potassium amalgam.

The sharpness of the spectra exhibited by europium ions has been utilized by Freed, Weissman and Fortess (Univ. of Chicago) in the study of chelate coordination compounds. The spectra vary with the particular arrangement of a diketone in the coordination compound. In this way it was found that not only does the dimer of europium acetylacetonate exist in two stereoisomeric forms, but this is also true for the monomers. Various alternative suggestions were made to account for the isomeric monomers.

NON-EXISTENCE OF ORGANO-METALLIC FREE RADICALS

There are described in the literature a number of triaryl and trialkyl metal compounds that are presumably capable of existence in the monomeric or free radical state. Selwood and co-workers (Northwestern Univ.) have now completed measurements on the magnetic properties of four of these compounds. In every instance the compounds were found to be diamagnetic and hence do not exist as free radicals. It seems probable that this is true for the other supposed organometallic free radicals since the germanium, tin, and lead compounds so far studied are typical examples of this class of substances.

NEW REACTIONS AND METHODS OF SYNTHESIS

The discovery of new synthetic methods is continually making possible the preparation of hitherto unknown compounds or increasing the availability of rare substances. It has been found by Erickson and Ashton (Louisiana State Univ.) that the action of silver carbonate upon *t*-butyl chloride produces *t*-butyl ether. Unsuccessful attempts have been made to prepare this compound and other tertiary ethers for over 50 years, and it had even been considered incapable of existence. A new method of pre-

paring secondary amines has been described by Buck and Baltzly (Burlington Wellcome and Co.). It was found that the readily obtainable tertiary amines containing a benzyl group are reduced with hydrogen and a platinum oxide catalyst with removal of the benzyl group and formation of the secondary amines. An investigation by Briggs and Taylor (Princeton) of the conversion of heptane into toluene by cerium, vanadium and thorium oxide catalysts demonstrated that the patent literature claims were too optimistic. The vanadium oxide catalyst gave a much better conversion than the others, but even this was somewhat inferior to chromium oxide. The synthesis of toluene from petroleum sources is particularly interesting at present because of the great demand for this hydrocarbon in making explosives.

The purification of hydrocarbons of the aliphatic type and of petroleum fractions by washing with sulfuric acid has long been common practice. Whitmore and Johnson (Penn. State College) have found that 2,2,4-trimethylpentane, the isoöctane of premium motor fuels, when stirred with sulfuric acid over a period of ten days was largely converted into other products. Although this reaction seems to be of no value as yet for the synthesis of new compounds because of the complexity of the mixture obtained, it is a surprising new reaction of a saturated hydrocarbon.

Another new reaction that is of theoretical interest although not of immediate practical importance is the hydrolysis of chloromethanesulfonamide discovered by Johnson and Douglass (Yale). Sulfonamides ordinarily hydrolyze with difficulty, and not at all in alkaline solution. Likewise the chlorine in chloromethanesulfonic acid is relatively inert but chloromethanesulfonamide hydrolyzes rapidly in dilute alkali with loss of both chloride ions and ammonia. The only satisfactory mechanism assumes the cleavage of the carbon-sulfur linkage as the primary step in the reaction. This is remarkable since most aliphatic sulfonic acid derivatives un-

dergo such a cleavage only at high temperatures. Formaldehyde is the other reaction product. Chloromethanesulfonanilide hydrolyzes almost as readily as the simple amide.

Although isoprene is of importance as the structural unit in the rubber molecule and in a great many other naturally-occurring substances, including vitamin A, it is not a particularly easy compound to prepare in the laboratory. The distillation of rubber is an obnoxious procedure and gives only a small yield. Taylor and Shenk (Princeton) have developed a three-step process whereby it is possible to obtain a 65% yield of isoprene from acetone. This is probably the most convenient method so far described for preparing isoprene on a small scale.

For many years various investigators have tried to prepare biphenylene, a compound in which two benzene rings are joined by adjacent carbons of each ring. Lothrop (Trinity College) has reported that the action of cuprous oxide upon 2,2'-dibromobiphenyl and also upon biphenyleneiodonium iodide gives a small but definite yield of a new hydrocarbon, believed to be biphenylene. An examination of this compound from the standpoint of the Mill's-Nixon effect will be of interest.

"CHLORINOLYSIS" REACTIONS

In a continuation of their work on the chlorination of various aliphatic compounds, McBee, Hass and co-workers (Purdue) have found that dichloropropanes are converted into octachloropropane by the action of chlorine at atmospheric pressure in the presence of light. If, however, the dichloropropanes were heated at high pressure with excess chlorine, the carbon to carbon bonds were broken with the formation of carbon tetrachloride and hexachloroethane. Similar treatment of chlorinated pentanes was found to produce carbon tetrachloride, hexachloroethane, and hexachlorobutadiene. Since carbon tetrachloride is of industrial importance and the hexachloroethane was found to be convertible to tetrachloroethylene, a use-

ful solvent, by a simple heat treatment, the so-called chlorinolysis reaction may prove to be of commercial as well as of chemical interest.

SYNTHESIS OF LARGE RING COMPOUNDS

One of the more difficult synthetic problems is that of preparing compounds in which there is a large number of atoms in a ring. An interesting contribution to the methods available for such syntheses has been reported by Adams and Whitehill (Univ. of Illinois). They have studied the reaction between two molecules, each of which contains two reactive groups, in a solution so dilute that when two groups, one group from each of two molecules, had interacted, the chance of the other two groups reacting before some secondary change occurred was high. As an example, the reaction of hydroquinone with hydroquinone bis (ω -bromo- n -hexyl) ether gave a 15% yield of the cyclic tetra ether, which is somewhat better than could be obtained by a more roundabout process. It seems probable that other polyatom rings can be made by similar processes.

FLUORINATION OF ACETONE AND OF BENZENE

The reaction of fluorine upon organic compounds is unique among the halogens. Whereas chlorination or bromination customarily results in the replacement of a hydrogen by the halogen, fluorination results in drastic changes in the molecule. In a continuation of their investigation of fluorination reactions, Bigelow and Fuku-hara (Duke) have studied the action of fluorine upon acetone in the gas phase. The products identified were carbon tetrafluoride, carbonyl fluoride, trifluoroacetyl fluoride, oxalyl fluoride, fluoroacetone and hexafluoroacetone. Bigelow explains the formation of these products by a free radical, chain mechanism involving fluorine atoms. The formation of compounds by a cleavage of carbon to carbon bonds requires unusual conditions when chlorine is the reagent (see section "Chlorinolysis Reactions") but ap-

pears to be normal with fluorine. In the reaction with benzene, a series of compounds containing only carbon and fluorine, commonly known as "fluorocarbons," was formed. One of these, containing 12 carbon atoms or twice as many as the original benzene, is of interest as it is the result of a reaction that never occurs with the other halogens, the establishment of a new carbon to carbon bond.

REACTION OF SODIUM WITH NEOPENTYL CHLORIDE

The reactions of neopentyl alcohol and the corresponding halides have been investigated frequently because they are accompanied by rearrangements. Whitmore (Penn. State) has explained these rearrangements by assuming the intermediate existence of a carbon atom surrounded by only six electrons, an unstable structure that becomes stabilized through one of several alternative molecular changes. It has now been found that, when neopentyl chloride is treated with sodium, a new type of reaction occurs. There is no molecular rearrangement and an important product is 1,1-dimethylcyclopropane. Since the action of sodium on a halide is believed from other evidence to give a free radical rather than a carbon atom with a sextet of electrons, Whitmore's theory of the rearrangement already mentioned is indirectly confirmed.

THE SYNTHESIS OF CIS AND TRANS OLEFINS

Although it is well known that any olefinic compound having a substituent other than hydrogen on each of the carbons attached to the double bond should exist in two isomeric forms, there has been no convenient general method for obtaining the two isomers of olefinic hydrocarbons in a pure state. Campbell and Eby (Notre Dame) have found, however, that the reduction of a dialkylacetylene to an olefin can be controlled in such a way as to give either the *cis* or *trans* olefin. It was already known that the reduction of a dialkylacetylene by hydrogen in the presence of a colloidal platinum or Raney nickel catalyst

gave a *cis* olefin. It has now been found that reduction with sodium in liquid ammonia gives a *trans* compound in a high state of purity. The *cis* olefins prepared by catalytic reduction are occasionally contaminated with 2-3% of the *trans* isomers.

REARRANGEMENT OF γ -ALKOXYBUTYRYL CHLORIDES

In the preparation of γ -methoxybutyryl chloride and similar compounds Blicke, Wright and Zienty (Univ. of Michigan) found that at steam bath temperatures or slightly higher rearrangement occurs with formation of the alkyl γ -chlorobutyrate. The reaction is a general one for acids containing the γ -alkoxy group and can be avoided by effecting the acid chloride formation at room temperature.

NEW REACTIONS OF THE GRIGNARD REAGENT

It might be expected from the tremendous number of investigations upon the reactions and properties of the Grignard reagent that little new could be expected in this field. However, Kharasch and coworkers (Univ. of Chicago) have discovered that the products obtained in the reaction of Grignard reagents with a variety of compounds can be controlled in a striking manner by the presence of metallic salts as catalysts. Some of the products obtained are entirely new. The reaction of benzophenone with isobutylmagnesium bromide normally gives a high yield of benzhydrol, a reduction product. It was found that in the presence of 2% mole of manganous chloride a high yield of benzpinacol is produced. The effect of chromic chloride is in the same direction but less pronounced whereas cuprous chloride has no effect. In the reaction of methylmagnesium bromide with isophorone more complex effects were observed. In the absence of a catalyst this unsaturated ketone normally reacts at the keto group only. In the presence of ferric chloride the chief product is a new compound that is isomeric with the isophorone but whose structure is still

under investigation. On the other hand cobalt chloride changes the product again so that the pinacol is formed in nearly 80% yield. Again cuprous chloride leads to still another result, a ketone produced by 1,4-addition to the conjugated system. In the reaction of benzophenone with methylmagnesium bromide the normal product is diphenylmethylcarbinol and nothing else. By the addition of a trace of cobalt chloride the course of the reaction is changed so that benzophinacol is produced in high yield. Even more surprising than these observations is the effect of metallic halides in promoting a reaction between an arylmagnesium halide and a substance such as bromobenzene. Normally these substances show no tendency whatever to enter into a reaction. However, in the presence of cobaltous chloride a vigorous reaction occurs with the formation of biphenyl, the bromobenzene acting as an oxidizing agent toward the Grignard reagent. The bromobenzene can be replaced by an alkyl halide without greatly changing the results. Not only is the reaction of exceptional interest, but it also provides a useful method for preparing diaryl compounds on a laboratory scale. The reports of further investigations in the field will be awaited with interest.

SYNTHETIC RUBBERS

The present situation regarding synthetic rubbers has been outlined by Bridgewater (E. I. duPont de Nemours and Co.). Numerous varieties of synthetic rubber are now known; aside from polymerization products of various "dienes" including isoprene, butadiene and chloroprene there are numerous materials obtainable by polymerizing mixtures of a diene with an olefinic compound such as isobutylene, styrene, or acrylonitrile. Varieties of synthetic rubbers have even been prepared by polymerizing mixtures of three different compounds.

Several of the synthetic rubbers have been found suitable for making tire treads that are equal to those made from natural rubber in wearing

qualities. Although approximately 75% of our consumption of rubber goes into tires, other uses are of great importance in industry. During the past ten years synthetic rubber has been adapted to thousands of uses and the experience thus gained will be invaluable if the supply of natural rubber is seriously decreased. The estimated 1941 production of neoprene, butadiene, and polysulfide rubbers totals 11,700 long tons compared with 3,260 tons for the preceding year, but this is still only 1.5% of crude rubber production. However, the production is expected to increase rapidly during 1942.

One of the problems arising from an increased use of rubber is the production of a sufficient supply of rubber chemicals. Aniline is the basis for many rubber accelerators, and although aniline production facilities are being increased, they are still not entirely adequate according to Coe of the U. S. Rubber Co. Zinc oxide and formaldehyde are used in large quantities in processing rubber. While the supply of zinc oxide may be adequate, difficulties are being encountered in obtaining sufficient formaldehyde.

COMMERCIAL PREPARATION OF ZEIN

It has been known for more than 100 years that corn contained an alcohol-soluble protein, but only recently has a process been developed that makes zein available for industrial use. Swallen (Corn Products Refining Co.) has recently described the procedure of isolating zein from gluten meal, a by-product in the preparation of starch from corn. The maximum zein content of the samples of corn tested was found to be 6.4%, but the potential yield of zein averages about 1 lb. per bushel of corn. Apparently the most promising use of zein is as a raw material for plastics of the casein type. These are of particular value in the coating of paper such as that used for magazine covers.

MECHANISM OF THE DIAZO COUPLING REACTION

The commonly accepted mechanism for the fundamental reaction in

the preparation of azo dyes, the coupling of a diazonium salt with an amine or phenol, assumes that elimination of water occurs between the unionized diazo-hydroxide and the phenol or amine. In a reinvestigation of this reaction by Wistar and Bartlett (Harvard) and by Hauser and Breslow (Duke) it has been shown that the diazonium ion is the active agent. In Bartlett's work a study of the kinetics of the coupling reaction in solutions of varying hydrogen ion concentration showed that either the diazonium ion reacts with the free amine or the diazohydroxide reacts with the anilinium ion. The latter was considered to be not in accord with known facts about the substitution behavior of an amine salt. Approaching the problem from the electronic viewpoint, Hauser decided that the diazonium ion was the active agent and then showed experimentally that benzenediazonium chloride couples with a phenol in dry pyridine. In the absence of water there is no possibility of the benzenediazonium hydroxide being present, and hence the ion is probably the active agent.

MILLS-NIXON EFFECT

Interest in the Mills-Nixon effect, the supposed fixation of the double bonds in a benzene ring due to the angles at which the external valences on two adjacent carbon atoms are held by an attached ring, continues to receive attention. Arnold and Zaugg (Univ. of Minnesota) have found that a comparison of the oxidation-reduction potentials of *o*-xyloquinone, 4,7-hydrindenquinone and 1,2,3,4-tetrahydro-5,8-naphthoquinone indicates that there is a measureable but small effect in the case of the hydrindenquinone but not for the naphthoquinone. In an extensive investigation on a series of *o*-dibromo derivatives Kosiakoff and Springall (Calif. Institute of Technology) found little evidence for a change in the external bond angles of the benzene ring, but the carbon-bromine bond was considerably shortened in the dibromohydrindene, indicating an increase in the importance of the excited ionic state

where this linkage takes on double-bond character. The net result of the investigations is that the Mills-Nixon effect is not large in the compounds studied thus far, and the effect of the attached side ring is to change the resonance pattern of the benzene ring by increasing the importance of excited states rather than to distort the bond angles.

STRUCTURE OF AN ACID FROM CORK

In a continuation of their work on the composition of cork, Drake and coworkers (Univ. of Maryland) have re-examined the structure of phellonic acid. Previous investigators have concluded that this compound is α -hydroxybehenic acid, a twenty-two carbon acid. A careful study of the degradation products of the acid and finally its synthesis demonstrated that the acid contains twenty-four carbon atoms in a chain and that the hydroxyl group, instead of being on the carbon adjacent to the carboxyl, is near the other end of the molecule. Phellonic acid is 22-hydroxytetracosanoic acid and phellogenic acid, one of its degradation products, is 1,20-eicosanedicarboxylic acid.

CARBOHYDRATE CHEMISTRY

Since the four-carbon sugars or tetroses are not readily available from natural sources, new methods of preparing them in the laboratory are of interest. Lucas and Baumgarten (Calif. Institute of Technology) have devised a procedure for the reduction of tartaric acid to 1-threitol. This involves the reaction of diacetyl tartaric anhydride with methanol to give the mono ester, conversion of the latter into the acid chloride followed by catalytic reduction to give the methyl ester of a uronic acid. Further reduction and hydrolysis produce the threonic acid and finally 1-threose and the 1-threitol are obtained. Although the desirability of preparing four-carbon sugars from tartaric acid was recognized by Emil Fischer many years ago, this is the first time a successful procedure for effecting this transformation has been devised.

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In a continuation of their work on the analysis of mixtures Hurd and coworkers (Northwestern Univ.) have found it possible to distill the propionates of mono-, or di- and even trisaccharides at low pressures. The propionates are more readily distilled than the acetates and are more useful than the methyl ethers because they can be reconverted into the original sugars by mild hydrolysis. It seems probable that the general procedure described will be of value in separating the mixtures of sugars found in certain natural and industrial products.

COMPOSITION OF CATNIP OIL

The nature of the volatile oil obtained from the common catnip plant, *Nepeta Cataria*, has been investigated by McElvain, Bright, and Johnson (Univ. of Wisconsin). About 85% of the oil dissolves in dilute alkali, the characteristic odor of the oil remaining in the undissolved portion of the oil. The alkali-soluble fraction is chiefly a crystalline acid which appears to be a trisubstituted cyclopentane derivative containing both aldehyde and carboxyl groups. It was given the name of nepetalic acid and various degradation products prepared. The portion of catnip oil responsible for the odor is a high-boiling viscous yellow substance; its chemical nature is under investigation.

THE NATURE OF LUCIFERIN

The composition of the substance responsible for the "cold light" produced by various organisms has long

been of interest. Investigations in this field have been greatly handicapped by scarcity of material, but Chakravorty and Ballentine (Princeton) by the use of ultramicroanalytical methods have been able to obtain enough information about luciferin, the active material, to suggest a partial structure. Luciferin is reversibly oxidized by oxygen; this is explained by postulating a hydroquinone structure. The irreversible reaction which occurs in the presence of the enzyme luciferase is responsible for the production of the light, and from the evidence at hand is due to a hydroxymethyl ketone. It is the plan of the investigators to synthesize a compound containing both of the suggested structural units and compare its behavior with that of the natural luciferin obtained from *Cypridina*, a genus of marine crustaceans which exhibits bioluminescence.

SYNTHESIS OF AN ISOMER OF THYROXIN

Since the establishment of the structure of thyroxin, the hormone of the thyroid gland, by Harington and Barger some years ago, a number of analogs and isomers have been synthesized. Nieman and Mead (Calif. Institute of Technology) have succeeded in preparing an isomer which, from preliminary tests, exhibits the same kind of physiological action as does the natural hormone. However, a given weight of the new compound produces only one twenty-fifth the effect of an equal weight of di-thyroxine.

ELECTROCHEMISTRY

By COLIN G. FINK
PROFESSOR, COLUMBIA UNIVERSITY

ELECTROTHERMICS

With the rapidly-increasing demand for special alloy steels for armament, a number of new large-capacity electric furnaces were installed and put into operation during 1941. The Crucible Steel Co.,

specialists in armament steels, installed two additional 25-ton Heroult arc furnaces.

The Westinghouse Company marketed a new magnetic silicon steel "hipersil," a product of the electric furnace and the result of nine years

of intensive research. The magnetic flux-carrying capacity is 33 per cent greater than that of the best silicon steels produced heretofore. Lighter and more efficient transformers are being built with this new steel.

To increase the mechanical strength of the electrodes used in electric steel furnaces small additions of iron oxide are made to the original coke and binder mixture, from which the electrodes are fabricated. The increased strength of these new electrodes is attributed to the formation of iron carbides within the mass of the electrodes during manufacture.

In the field of production of the light metals, notably magnesium and aluminum, there has been a marked tendency to leave the old standard fused salt methods and resort to electric furnace reduction and sublimation. Thus, for example, a new plant for the electric furnace production of magnesium metal was put into operation at Permanente, Calif. during the year. The basic reaction involved is relatively simple:



The difficulty lies in preventing the magnesium metal produced from being oxidized back to MgO. Sudden dilution of the gases (vaporized magnesium metal and carbon monoxide) as they leave the furnace has solved the problem. This electric furnace process may soon be a serious competitor of the old fused salt process for making magnesium metal.

FUSED ELECTROLYTES

The most phenomenal development in electrochemistry in 1941 was that of the magnesium metal industry. The demands of the Navy and the Army for millions of pounds of magnesium metal to be used in airplane construction, in bombs, in tanks, and in other motorized equipment, stimulated the growth of the magnesium industry to such an extent that United States production of the metal in 1941 was 50 times that of 1931. No other metal has "skyrocketed" as has magnesium. During 1941 magnesium

was the master key metal of the defense program.

The Dow Chemical Co., formerly the sole producer of magnesium in America, started its large new plant at Freeport, Tex. Here the raw material is the magnesium chloride recovered from sea water. Historically, it was "the first production of metal from the ocean." By the end of 1942, there will probably be six companies instead of one, producing this light metal of "a thousand uses." One of the outstanding characteristics of the Dow metal is its very high resistance to fatigue, a property shared by only two or three other metals. Magnesium rich alloys will withstand repeated vibrations longer than nearly any other metal.

With the very rapid increase in the numerous applications of magnesium metal, researches were pressed in the direction of improving upon the surface treatment of the metal, so as to protect it against corrosion and abrasion. Most of the successful treatments now employed involve the use of fluorine.

Since, in the present war, the airplane is the basic weapon of offense as well as defense and since the airplane is constructed largely of aluminum, demands for this metal grew tremendously during the course of 1941. The Aluminum Company of America's new plant at Vancouver, Wash. was expanded to produce more than 75,000 tons of aluminum per year. The Reynolds Metals Co. started producing metal at the rate of 30,000 tons per year. The expansion of the aluminum industry in the United States has been so rapid that the production in 1942 will probably be ten-fold that of 1932.

New processes for protecting the aluminum metal surface against corrosion have been developed. The life of even the lowly aluminum frying pan has been extended twenty-fold.

One of the direct results of the fall of France was the initiation of a calcium metal industry in this country. Heretofore, some 40,000 pounds of this metal were annually imported from France. The Union Carbide Co.

met the demand of American consumers of this electro-chemical product and in a comparatively short time set up a complete plant for the production of calcium metal and marketed it at \$1.25 per pound, a price which is appreciably lower than that of many other metals in common industrial use.

The Dow Chemical Co. likewise went into the production of calcium metal. There is every indication that even after the close of hostilities the production of calcium metal in the United States will continue to thrive. Calcium metal's chief application today is that of a deoxidizing and desulfurizing reagent, for molten steel (including stainless steel) and for magnesium rich alloys.

ELECTROPLATING

The outstanding event of the year in the electroplating field was the two-day session on "Modern Electroplating" sponsored by the Electrochemical Society at its fall convention at Chicago. Experts from all over the country participated. The 20 papers devoted to commercially deposited metals, from iron to gold, are published by the Society in a special volume.

The year witnessed the continuation of two important trends and developments in the plating field: (1) production of relatively heavy electrodeposits that require no polishing or buffing (so-called "bright-plate"); and (2) plating of strip steel,—plating before fabricating and at plating speeds a hundred-fold of those of the past. These two developments, occurring almost simultaneously, have brought about an entirely new situation as to the major control of the metal plating industry. A generation ago it was the automobile manufacturers who annexed a goodly part of the plating industry and laid down new specifications applicable to the operation of 50,000-gallon plating tanks in place of the two-gallon jars of the small plater. Closer control of solution components and of operating conditions resulted.

With ever increasing labor costs,

the next and most recent step was to eliminate many of the repeated handlings of multitudinous parts to be plated. With the advent five years ago of strip steel, a solution to this costly handling immediately followed. Millions of articles are today plated before fabricating. Strip steel plated with one or more of a half dozen metals is shipped to the fabricators to be made into cans, tubes, reflectors, bowls, decorative and architectural fittings. The steel companies are gradually taking over the control of the plating industry. Electrogalvanizing, electrotinning, electrocoppering, and others are already included in the steel companies' scope. In consequence of this new shift in the control of the plating industry, it is believed that electroplated metals will be more widely used in the home as well as in the factory than ever before and will readily meet the serious competition of plastic products.

"Bright plate" is likewise a step in the direction of cutting labor costs. Since the first "bright nickel" plating bath introduced by Fink and Lah ten years ago, numerous other "bright" baths have appeared. During 1941 the DuPont Co. was particularly active in developing new zinc plating baths that produce highly lustrous deposits requiring no polishing. A number of investigators have obtained improved nickel plates upon adding certain organic chemical compounds to the standard acid sulfate bath. Harold E. Potts obtains a very fine grained nickel electrodeposit, which is highly lustrous, upon adding to the acid nickel sulfate plating bath about one gram per litre of benzene sulfonamide.

A new process for the protection of silver against tarnishing comprises the deposition of a film of beryllium oxide onto the surface of the silver.

ELECTRONICS

The field of electronics was specially active during 1941, due primarily to the urgent demands and requirements of the Navy and Army. Many new devices for the detection

COGNATE SOCIETIES AND RESEARCH INSTITUTIONS

of submarines, buried time bombs, approaching aircraft, etc. were developed and perfected, the details of which can not be discussed today.

But likewise in other fields of electronics, besides the military, outstanding advances were made. The "tenderizing" of beef, by exposing it to the sterilizing action of the Rentschler mercury lamp, has become a standard commercial enterprise. The same lamp has been installed by many hospitals in the operating room.

A number of new metal vapor discharge lamps were marketed during the year, among others a highly efficient thallium vapor lamp. There is no longer any doubt as to the future

of the fluorescent lamp. It has become permanently established both in places of business and in the home. It is the tungsten lamp's biggest competitor.

To increase the output of ozone in the Siemens tube the new electrodes are coated with titanium or zirconium oxide.

Gases are being used to an increasing extent as insulating media for high voltage equipment. Tests on Freon ($\text{C Cl}_2\text{F}_2$) indicate it to be most satisfactory in such applications according to Frank T. deWolf.

A number of new chemical syntheses in the electric discharge tube were reported.

PERIODICAL PUBLICATIONS

American Physics Teacher

American Institute of Physics, 175 Fifth Ave., New York City.

Chemical and Metallurgical Engineering

330 West 42nd Street, New York City.

Chemical Engineering Catalogue

330 West 42nd Street, New York City.

Chemical Industries

522 Fifth Ave., New York City.

Chemist (The)

233 Broadway, New York City.

Industrial and Engineering Chemistry

332 West 42nd Street, New York City.

Journal of the American Chemical Society

12 Oxford Street, Cambridge, Mass.

Journal of Chemical Education

11 West 42nd Street, New York City.

Journal of Chemical Physics

175 Fifth Ave. New York City.

Journal of Mathematics and Physics

Massachusetts Institute of Technology, Cambridge, Mass.

Journal of Organic Chemistry

Mount Royal and Guilford Aves., Baltimore, Md.

Journal of Physical Chemistry

Mount Royal and Guilford Aves., Baltimore, Md.

Nature Magazine

295 Madison Ave., New York City.

Physical Review

175 Fifth Ave., New York City.

Physics

175 Fifth Ave., New York City.

COGNATE SOCIETIES AND RESEARCH INSTITUTIONS

(For further information, the reader may address the following organizations)

AMERICAN CHEMICAL SOCIETY, INC.,
728 Mills Bldg., Washington, D.C.

AMERICAN ELECTROCHEMICAL SOCIETY,
Broadway and 117th St., New York City.

AMERICAN INSTITUTE OF CHEMICAL
ENGINEERS, 50 E. 41st St., New
York City.

AMERICAN INSTITUTE OF PHYSICS, 175
Fifth Ave., New York City.

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| AMERICAN MICROSCOPICAL SOCIETY,
Kansas State College, Manhattan,
Kan. | COPPER AND BRASS RESEARCH ASSN.,
420 Lexington Ave., New York City. |
| AMERICAN PHYSICAL SOCIETY, Colum-
bia University, New York City. | NATIONAL RESEARCH COUNCIL, 29 W.
39th St., New York City. |
| AMERICAN SOCIETY OF BIOLOGICAL
CHEMISTS, University of Pittsburgh,
Pittsburgh, Pa. | SOCIETY OF CHEMICAL INDUSTRY, Pratt
Institute, Brooklyn, New York City. |
| ASSOCIATION OF OFFICIAL AGRICULTURAL
CHEMISTS, Box 290, Penn. Ave. Sta-
tion, Washington, D.C. | SYNTHETIC ORGANIC CHEMICAL MANU-
FACTURERS ASSN., 260 W. Broadway,
New York City. |

DIVISION XXII

BIOLOGY

ORGANIC EVOLUTION AND GENETICS

BY MYRON GORDON

RESEARCH ASSOCIATE IN GENETICS, NEW YORK ZOOLOGICAL SOCIETY

INTERNATIONAL GENETICAL CONGRESS

Probably the greatest single event in the progress of knowledge in Organic Evolution and Genetics during 1941, was the final publication in January of the *Proceedings* of the Seventh International Genetical Congress held in Edinburgh, Scotland, Aug. 23-30, 1939. The *Proceedings* are edited by R. C. Punnett and were issued as a supplementary volume of the *Journal of Genetics*.

The importance of this Congress to American biologists may be appreciated by the large number of American members (131), the second largest group represented and second only to representatives of Great Britain and Northern Ireland.

The great meeting was divided into nine sections: (A) Gene and chromosome theory; (B) Cytology; (C) Physiological genetics; (D) Animal Breeding in the light of genetics; (E) Plant breeding in the light of genetics; (F) Human genetics; (G) Genetics in relation to evolution and systematics; (H) Statistical Genetics; (I) Genetical aspects of growth, normal and abnormal.

A few of the papers presented under the general theme of Genetics in relation to evolution and systematics are as follows: Th. Dobzhansky, "On the genetic structure of natural populations of *Drosophila*"; J. S. Huxley, "Evolutionary genetics"; W. B. Turrill, "Taxonomy and cytogenetics in

plants"; S. C. Harland, "Genetical studies in the Genus *Cossypium* and their relationship to evolutionary taxonomic problems."

Under the heading of Comparative genetics and evolution, these papers were presented: A. Ernst, "Heterosylie als problem der evolution"; A. A. Boyden, "Genetics and animal relationship"; W. H. Eyster, "Genetic study in the genus *Tagetes*"; H. L. Ibsen and R. Bogert, "Pigmentation in relation to colour inheritance in mammals"; L. Blaringhem, "Heredité et evolution chez les plantes"; T. Marchlewski, "Change of dominance in canine colour genetics"; S. W. Mensinkai, "Evolution in the genus *Allium*."

Under the section devoted to Microevolution, the following papers were presented: H. H. Plough, "The influence of temperature in evolution as shown by studies of lethal mutations in *Drosophila*"; P. T. Ives, "A high frequency of lethal mutations in a wild population of *Drosophila*"; H. Lamprecht, "The limit between *Phaseolus vulgaris* and *Ph. multiflorus* from the genetical point of view"; K. Miczynski, "The inheritance of some characters in the inter-varietal crosses of *Aegilops*"; H. P. Riley, "Morphogenesis of flower parts in two species of *Iris*"; S. R. Zarapkin, "The measurement of divergency"; M. de Larambergue, "Races aphalliques et euphalliques de *Blinus contortus*, recherches sur le déterminisme

genotypique de l'aphallie"; R. E. Cleland, "Analysis of wild American races of *Oenothera* (*Onagra*)"; R. R. Gates, "The geographical relationships and evolution of the subgenus *Onagra*."

There was a section devoted to Experimental and Wild Populations which included the following papers: E. B. Ford, "A quantitative population study in butterflies"; S. Emerson, "The distribution of self-sterility allelomorphs in a natural population"; C. Barigozzi, "Analisi citogenetica di due popolazioni naturali di *Artemia salina*"; K. Zimmerman, "Some results of genetical analysis in populations of wild rodents"; W. P. Spencer, "Ecological factors and the distribution of genes in *Drosophila hydei* populations"; T. J. Jenkin, "Evolution in wild populations"; A. Buzzati-Traverso, "Genetica di popolazioni melle *Drosophilae* italiane"; H. Spurway, "Autosomal genes collected from wild populations of *Drosophila subobscura*"; U. Philip, "A genetical analysis of three small populations of *Dermestes vulpinus* F."

SYMPOSIUM ON GENES AND CHROMOSOMES

Dr. M. Demerec, director of the Biological Laboratory, Cold Spring Harbor, N. Y. announced the publication of the proceedings of the 1941 Cold Spring Harbor Symposia on Quantitative Biology which was concerned with "Genes and Chromosomes—Structure and Organization"; the announcement appeared in the *Journal of Heredity* (32:391-392, 1941).

In the announcement, Dr. Demerec says: "In discussions between geneticists and physicists, among the questions invariably asked are: What is the approximate thickness of the chromosome threads; when do they divide; how close together do they lie; how tightly are they coiled; and what is their number? The experimental evidence pertaining to these and related questions was presented by C. A. Berger, L. C. Huskins, B. R. Nebel and H. E. Warmke in the first section of the Symposium dealing with the

"Structure of chromosomes as revealed by optical methods."

"It is generally assumed that in giant salivary gland chromosomes found in the larvae of flies the primary chromosome thread is multiplied a great many times. The structures which are visible in salivary gland chromosomes are also present in the chromosomes of other cells but they cannot be detected since they are too fine for our microscopes. Thus salivary chromosomes constitute material unusually suitable for studies of the structures and for the study of changes induced in chromosomes." Known facts dealing with the problem in which salivary chromosomes were utilized were discussed by P. A. Cole, E. Sutton, D. Mazia, C. W. Metz, T. S. Painter, and J. Schultz.

In the third section, "Spontaneous and induced changes in chromosome structure," the following members took part in the discussions: J. G. Carlson, M. Delbruck, U. Fano, B. P. Kaufman, B. McClintock and K. Sax. "It is known," says Dr. Demerec, "that chromosomes break spontaneously and also that such breaks may readily be induced by X-rays and similar radiations. Since the occurrence of a break is undoubtedly connected with some chemical reaction, the studies of the breaks may give a clue for an analysis of the chemical properties of chromosomes."

"Spontaneous and induced changes in genes" were discussed in the fourth section of the Symposium by M. Demerec, J. W. Gowen, A. Hollaender, H. J. Muller, H. H. Plough, M. M. Rhoades and L. J. Stadler which was designated as "Mutations." An emphasis was placed on the problem of spontaneous mutations which has lately been too much neglected. It is felt that data on spontaneous mutations may help to clarify certain problems dealing with the induced changes and thus contribute toward better understanding of chemical processes involved in mutational changes. However, a full opportunity was afforded for discussion of changes in genes induced by various physical agents, since at present these data constitute

ORGANIC EVOLUTION AND GENETICS

the best material for interpreting the physico-chemical properties of genes and chromosomes."

Other topics taken up at the Symposium were "Physical aspects and tools" in which I. Fankuchen and V. K. Zworykin presented papers. The problem of the properties of giant molecules and particularly of proteins, nucleic acid, and viruses were topics discussed by an imposing array of bio-chemists and bio-physicists. A general resumé was presented by H. J. Muller as a concluding paper.

THE UNIVERSITY OF PENNSYLVANIA CONFERENCE

The following series of addresses were presented at the University of Pennsylvania Bicentennial Conference on the general subject of Cytology, Genetics and Evolution: "The nature of the gene," by M. Demerec; "The sex chromosomes: heteropycnosis and its bearing on some general questions of chromosome behavior," by Franz Schrader; "Chromosome structure," by Charles W. Metz; "Chromosomal interchanges," by Albert F. Blakeslee; "Chromosomal differences between races and species of *Drosophila*," by Th. Dobzhansky; "Evolution of the germplasm," by Clarence E. McClung; "Nuclear behavior and reproduction in ciliated protozoa," by William F. Diller; "Hereditary status of the rhizopods," by Herbert S. Jennings; "Inheritance in ciliated protozoa," by T. M. Sonneborn; "The physico-chemical properties of the nucleus," by Leon Churney; "The chromosomes of the amphibian nucleus," by William R. Duryee; "Radiation and the cell nucleus" by Paul S. Henshaw.

MICROEVOLUTION

In a paper entitled "Microgeographical variation in *Drosophila pseudoobscura*" which appeared in *Proceedings of the National Academy of Science* (25:311-314, 1939), Dr. Th. Dobzhansky presented data that suggest the existence of genetic differences between colonies of these fruit flies inhabiting close localities.

Dr. A. H. Sturtevant of the Cali-

fornia Institute of Technology in his paper entitled "High mutation frequency induced by hybridizing" which appeared in the same journal (25:308-310, 1939), found that the offspring between the two races of *Drosophila pseudoobscura* show a large increase in mutation frequency.

Melville H. Hatch writing in *Science* (9:182-183, 1941) on "An important factor in evolution" suggests that the principle of degenerative evolution in the absence of continued selective control seems to be a factor in understanding plant and animal diversity.

"The role of the individual in evolution" is described by George Gaylord Simpson in the *Journal of the Washington Academy of Science* (31:1-20, 1941). Dr. Simpson summarized his points as follows: "There are many sorts and degrees of individuality, but the difference between individual and group is absolute and fundamental. In Darwinian theory the incidence of novelty is impersonal but its subsequent history depends on individual activities and satisfactions, extrinsic and intrinsic. Fatalistic evolutionary theories are untenable. Traces of the old archetypic theories linger on but are being replaced by dynamic concepts of the individual, the species, and the phylum, inducing a time-dimension in each case and defining taxonomic categories as fields of varying individuals. The familiar epiorganism analogy (cell or organ is to individual as individual is to society) is being used in support of totalitarian ideology, and this support is biologically valid if the analogy is valid. Biological and philosophical concepts of the individuals are politically crucial at present. The epiorganism analogy is completely false in this application and the totalitarian concept of the individual is biologically unsound."

MORPHOLOGICAL EVOLUTION IN VERTEBRATES

Several significant papers appeared during 1941, in the field of vertebrate evolution, studies made from the morphological and paleontological

points of view. William K. Gregory and Henry C. Raven published a series of four papers on "Studies on the origin and early evolution of paired fins and limbs." Part 1. Paired fins and girdles in Ostracoderms, Placoderms, and other primitive fishes; Part 2. A new restoration of the skeleton of Eusthenopteron (Pisces Crossopterygii, Devonian, Quebec) with remarks on the origin of the Tetrapod stem; Part 3. On the transformation of pectoral and pelvic paddles of Eusthenopteron type into pentadactylate limbs; Part 4. A new theory of the origin of the pelvis of tetrapods. These papers were published in the *Annals of the New York Academy of Science* (42, Art. 3: 273-360, 1941).

Bobb Schaeffer has written "The morphological and functional evolution of the tarsus in amphibians and reptiles" in the *Bulletin of the American Museum of Natural History* (78, Art. 6:395-472, 1941).

G. Miles Conrad studied "A fossil squirrel-fish from the upper Eocene of Florida" and traced its evolution from closely related forms. His paper appeared in the *Geological Bulletin* (22:1-47, 1941), of the State of Florida, Department of Conservation, Geological Survey, Tallahassee.

Under the title of "New observations on the blood group factors in Simiidi and Cercopithecidae," P. B. Candela, A. S. Wiener and L. J. Goss, in a cooperative study between New York University and the New York Zoological Park, reported in *Zoologica* (25:513-521, 1940), that existing data on the blood groups factors in apes credit them with blood groups indistinguishable from those of man. The examination of the blood of a gorilla revealed an exception to this rule. From their work they suggest the possibility that old world monkeys, whose blood cells are not agglutinated by test sera but whose own sera contain group specific agglutinins, might have the A and B factors in their tissues and secretions.

Five rhesus and 12 Java macaques were tested. In the former the constantly present anti-A agglutinin in

their sera was found to be accompanied by a B-like factor in the tissues and secretions. One Java macaque gave a B reaction; seven gave A reactions; three gave AB reactions; and one reacted as group O. In each of the monkeys tested, the blood serum contained the appropriate complement of group-specific agglutinins, just as in man. Further, a correlation with the familial relationships revealed no exceptions to the laws governing the heredity of the group factors in man.

Gordon L. Wells found that the eyes of snakes differ from those of the lizards and related vertebrates in numerous fundamental details. In his paper entitled "Ophthalmological implications for the early history of the snakes" which appeared in *Copeia* (1940, 1:1-8), the author states that in many instances similar functions are accomplished by structures that are completely non-homologous. The snakes were probably derived from subterranean ancestors in which the eye had degenerated, and the eye has secondarily redeveloped in modern snakes.

J. B. S. Haldane studied the blood group frequencies of 75 European populations. The data are contained in *Human Biology* (12:457-480, 1940), in a paper entitled "The blood group frequencies of European peoples, and racial origins." Haldane found that, in addition to the well known gradient from East to West in which the frequency of B decreases and that of O increases, a striking variation is discerned in the frequencies of A and O among the peripheral populations of Western Europe with low frequencies of B, including Scandinavia, Iceland, Spain, Portugal, Sardinia, and the British Isles. In particular the last are very heterogeneous. These populations with low B are regarded by Haldane as remnants of a primitive European population.

NATURAL SELECTION

Joshua L. Bailly Jr. of the Museum of Natural History, Balboa Park, San Diego, Calif. presented his "A contribution to the theory of evolution

by natural selection" in the *American Naturalist* (75:213-230, 1941). He says that in the course of his investigation of the physiological races of snails, *Lymnaea columella*, he arrived at the conclusion that in some instances correlation may exist between physiological and morphological characteristics and that the physiological may be the more variable. In such a case natural selection may act directly on the physiological features while the morphological features may be subject to the same selective process indirectly as the consequence of the correlation. Survival of certain morphological features which cannot readily be seen to be adaptive may perhaps be explained in this way.

Jens Clausen, David D. Keck, and William M. Hiesey, in a cooperative study between the Carnegie Institution of Washington and Stanford University, presented a report, "Regional differentiation in plant species" in the *American Naturalist* (75:231-250, 1941). They found a correlation to exist between the genetic-physiologic differentiation of a species complex and the climatic zones it occupies. They established this by experiments conducted in the transect across central California, extended from near the seacoast to the high Sierra Nevada. They found that races of species of distinct complexes from similar environments (the same life zones) have similar modifications and patterns of reaction when moved to new environments. Differentiation within the species complex is purely genetic, resulting in a few major climatic races. This may be accomplished with or without a change in chromosome number. Fitness of plants to survive in their given environments appears to lie in their genic composition rather than in their chromosome number. Not the species itself, but the regional climatic race, or ecotype, is the important ecological unit when fitness to the environment is considered, and its emergence through natural selection acting upon populations marks an important evolutionary step. A species, these workers say, may be composed of one or many ecotypes, and hence

occupies a limited or wide range of habitats. The limits of the species depend upon the formation of isolating genetic barriers.

H. E. Wood of the University of Newark, N. J. presented a report, "Trends in rhinoceros evolution," which appeared in the *Transactions of the New York Academy of Science* (Series II, 3:83-96, 1941). The author traces the main trends of evolution of these animals from the group of the Hyrachyidae which have close relatives in the horse group. Rhinoceros show examples of parallel and convergent evolution in length of crown, development of roots of the teeth, plications and hypsodonty in cheek teeth.

James C. Lipsett of the University of Maryland described an instance of dwarfism in a salamander which resembles similar monstrosities in the Creeper fowl, the bulldog, Dexter calf, and the achondroplastic human dwarf. In his paper entitled "Disproportionate dwarfism in *Amblystoma*" which appeared in the *Journal of Experimental Zoology* (86:441-457, 1941), Lipsett points out that the dwarfism is inherited as a simple recessive. Like chondrodystrophy, it is characterized by an early retardation in growth and the development of head abnormalities and micromelia. As part of the general distortion in development, the brain, prevented from growing anteriorly, bulges laterally in a too small cranium. Evidence of pressure on the brain is furnished by the nervous seizures to which the monsters are subject. Most of the animals are dead by the advent of metamorphosis.

A. M. Banta presented the results of long-continued studies on Cladocera, the water-fleas, in a book entitled *Studies on the Physiology, Genetics, and Evolution of Some Cladocera* published by the Carnegie Institute of Washington (x + 285, 170 fig. 1939). The book covers the life history and the induction of sexual types in these generally parthenogenetic animals, studies on the normal physiology, growth and growth patterns in a number of clones,

studies concerned with selection and the occurrence of mutations, some of which affect sexuality. The fortuitous origin of thermalness suggests, according to Dr. Banta, that thermal races in nature probably arise by mutation rather than by gradual acclimatization.

Frank M. Chapman reported, in the *Bulletin of the American Museum of Natural History* (77:381-438, 1940) under the title of "The post-glacial history of *Zonotrichia capensis*," from his study of over 1000 specimens of this sparrow taken from Chiapas, Mexico to Cape Horn, South America, that this species, impelled by glacial climate, moved southward to become a resident of Central and South America. This species according to Dr. Chapman, started as a raceless species but it now numbers 20 or more geographical subspecies. All the continental forms, with one exception, intergrade with one or more of their neighbors. It is Dr. Chapman's view that the existing races have not been derived one from the other but each one independently in response to its own environment.

Quantitative estimates of the anti-diuretic activity of pituitary extracts of representatives of mammals, birds, amphibians, teleosts, and elasmobranch fishes were made by H. Heller and reported in the *Journal of Physiology* (99:246-256, 1941) under the title of "The distribution of the pituitary antidiuretic hormone throughout the vertebrate series." This activity was found in every animal group, and the glands of different species of the same class contained roughly the same amount of antidiuretic activity per 100 grams of body weight. Mammals had eight times the amount of non-mammals. Heller suggests a relationship between the phylogenetic development of Henle's loop and the amounts of antidiuretic hormone produced by the posterior pituitary.

Vladimir J. Okulitch wrote in the *Transactions of the Royal Society of Canada, Section 4* (33:67-80, 1939) on the topic of "Evolutionary trends of some Ordovician corals." The most important conclusion he has drawn

from the study of early Ordovician corals is that the majority of the earliest Anthozoa appear suddenly as colonial forms, building massive coralla made of closely contiguous prismatic corallites, devoid of endothecal structures. This might indicate that their ancestors were colonial forms without calcareous skeletons. The available material does not point to a primitive dup coral as the ancestor of the Anthozoa. Possibly, Okulitch says, the ancestral anthozoan must be pictured as a soft mass, with numerous mouth openings which are surrounded by tentacles and which lead into gastral cavities, the whole colony sitting on the sea floor, or attached to seaweeds, similar to colonial hydroid of today. The next step in the evolution was the secretion of hard partitions, separating the individual gastric cavities and giving stronger support to the colony. The appearance of the mesenteries was a later development.

PUBLICATIONS

Suggestions for Teaching, Selected Material from the Field of Genetics, by A. D. Laton and E. W. Bailey. Monograph No. 1, Bureau of Publication, Teachers College, Columbia Univ., New York, 1939 (i-viii, 1-66).

Preface to Eugenics, by Frederick Osborn. Harper & Brothers, New York, 1940 (i-xi, 1-312). This book has been written by one who is Research Associate in Anthropology of the American Museum of Natural History and the recently appointed officer in charge of morale in the United States Army.

Multiple Human Births, by Horatio Hackett Newman (Doubleday, Doran and Company, Inc., New York, 1940 i-xii, 1-214, 19 photographs).

Biology of the Laboratory Mouse, by The Staff of the Roscoe B. Jackson Memorial Laboratory, George D. Snell, editor, Clarence C. Little, director (The Blakiston Company, Philadelphia, 1941: i-vii, 1-497, figs. 1-172).

Genetics and the Origin of Species, by Theodosius Dobzhansky. Columbia University Press, New York.

ENTOMOLOGY

Second Edition, Revised, 1941 (i-xviii, 1-446, 24 figures).

The Pacific Press Publishing Association of Mountain View, California published *Genes and Genesis* by Harold W. Clark, reviewed by C. Zirkle for *Biological Abstracts*.

Fundamentals of Comparative Embryology by Alfred F. Huettner (Macmillan Company, New York, i-xiv, 1-416, 168 figures).

The Genetic and Endocrinic Basis

for *Differences in Form and Function* by Charles R. Stockard and collaborators with special contributions on behavior by O. D. Anderson and W. T. James (The Wistar Institute of Anatomy and Biology, Philadelphia, i-xx, 1-775, 128 text figures and 113 plates and frontispiece).

Wildlife Conservation by Ira N. Gabrielson (Macmillan Company, New York, 1941: i-xv, 1-250, 24 figures, 32 plates).

ENTOMOLOGY

By E. PORTER FELT

BARTLETT TREE RESEARCH LABORATORIES

INSECT PHOTOGRAPHY

Colored films which can be used by amateurs in both movie and still cameras have greatly stimulated this phase of insect photography. They are being generally used in lectures. Microphotography has been used to some extent, and the possibilities in this field have been extended by the development of the electron microscope with possibilities of magnifications up to 1,000,000 diameters and yet with serious restrictions so far in the application in the study of insect structures.

INSECT RESPONSES

Oscillation in the abundance of the insect host and the parasite or predator has been demonstrated with the housefly and one of its parasites under simplified conditions and extending through seven generations.

Another study of general interest is technically characterized as ecogenotypical color variation in butterflies and deals with the effects of environmental conditions. It is shown that temperature, increase or decrease in precipitation or humidity, increase or decrease in solar radiation, and the rate of development of the organism all have effect on color development.

Many insects are injurious largely because of environmental changes produced by man. One of the latest to come to notice is that in relation

to conservation, particularly forest. Too often a program is adopted with little regard for possible effects. Immediate effect rather than the ultimate outcome frequently is given first consideration. This is particularly true in relation to drainage projects for the elimination of mosquitoes. A better understanding of ultimate effects should result in a fuller utilization of entomological knowledge in planning for the conservation of forests or the suppression of annoying insects.

INSECTICIDES

The search for more effective insecticides has continued unremittingly. There is a desire, especially in the case of ornamentals, to avoid the use of materials, such as arsenate of lead, which whiten and give an unnatural appearance to the foliage. Many prefer to use organic poisons since they are less dangerous to pets or domestic animals. Pyrethrum and rotenone compounds continue to be centers of interest. They are extensively used by gardeners. The chemists are searching other plant constituents for promising compounds.

THE GIPSY MOTH

The past half century has proved this insect a serious woodland pest in America. The matter is of great importance to much of the United States

if the barrier zone is not maintained. The seriousness of the situation is indicated by the annual expenditure of approximately \$700,000 of tax raised funds for control of the insect in Massachusetts alone, and, in addition, an average of over 182,000 acres of forest land in that state are stripped of leaves. This latter means a reduction in average growth of about one-third and the death in a decade of one-half the oaks in badly affected areas.

INSECTS AND DISEASE OF MAN

Studies along these lines have been prosecuted unremittingly. The most suggestive are in connection with equine-encephalomyelitis and the extremely dangerous tick-borne spotted fever of Montana. The relation of insects and disease has become a matter of great importance in connection with the training of army units in various sections of the country.

INSECTS AND PLANT DISEASES

The investigations and experience with the Dutch elm disease and its carrier, the European elm bark beetle, in the northeastern states has resulted in a marked change in opinion as to the deadly nature of the disease and the part of the beetle as a carrier. There has not been the sweeping destruction of elms in infected areas that was feared at first, and careful studies have indicated a decidedly restricted possibility of the beetle carrying the infection. It is believed by many that both the disease and the insect can be controlled reasonably well by cutting and burning diseased trees and insect-producing wood.

STATISTICAL METHODS

These are gaining recognition as aids in interpreting data. An outcome has been the development of apparatus for separating insects from soil and devices for measuring insect population. The U. S. Bureau of Entomology and Plant Quarantine has distributed a series of percentage tables designed to facilitate computations. A special session of biological statisticians was held in New York City late in December, 1941.

ENTOMOLOGICAL MEETINGS

The country-wide interest and the diversity of entomological activities are indicated by the annual meetings. The American Association of Economic Entomologists met at San Francisco, Dec. 29-Jan. 1, 1940. A summer meeting was held June 25-26, 1941 at Durham, N. H., The Cotton States Branch met at Waco, Tex., Feb. 5-8, The Eastern Branch at Baltimore, Md., Nov. 13-14, the Pacific Slope Branch at Pasadena, July 18-20. The Entomological Society of America held its annual meeting at San Francisco, Calif., Dec. 29-Jan. 1. The sixth annual Florida Entomological Conference was held at Gainesville, Ga., March 27-28. The fifth spring meeting of the Georgia Entomological Society was held April 5, at Macon, Ga. The National Pest Control Association met Aug. 27-29, at San Francisco. The fifth annual Pest Control Conference was held at Lafayette, Ind., Jan. 6-10. The first Pest Control Operators' Conference for the Eastern States was held at Amherst, Mass., Jan. 13-15. The third Pest Control Operators' Conference in the South was held at the Louisiana State University, Jan. 27-29. The fourth Pest Control Operators' Conference for the Pacific Slope occurred at Berkeley, Calif., Feb. 20-22. The fifth annual Tobacco Insect Conference was held at Oxford, N. C., July 22-24.

PUBLICATIONS

Juvenile and Popular.—*A lot of Insects* by Frank E. Lutz (Putnam), a delightful book with much autobiographical matter; *Butterflies* by Ralph W. Macy and Harold H. Shepard (University of Minnesota Press), a handbook; *Insects and Their Stories* by Harry Hoogstraal (Crowell), a popular work.

Text and Economics.—*College Entomology* by E. O. Essig (MacMillan), announced for January, 1942; *Embryology of Insects and Myriapods* by Oskar A. Johannsen and Ferdinand H. Butt (McGraw-Hill), *Insect Pests of Farm, Garden and Orchard* by L. M. Peairs, fourth edition (John Wiley & Sons); *Insect Pests of Stored*

Grain and Grain Products by Richard T. Cotton (Burgess Publishing Co., Minneapolis); *A Survey of Insecticide Materials of Vegetable Origin*, edited by H. J. Hollman (Imperial Institute, London), prepared by a commission which included the foremost British Insecticide Chemists.

Special Groups.—*Atlas of the Scale Insects of North America*, Series III, by G. H. Ferris, Series I and II appeared in 1937 and 1939 respectively; *Entomopageus Insects* by Curtis P. Clausen (McGraw-Hill), "The Plant Bugs or Miridae of Illinois" by Harry H. Knight, *Bulletin of the Illinois Natural History Survey*; "Revision of the North American Moths of the family Oecophoridae, with descriptions of new genera and species" by J. F. Gates Clarke, No. 3107, *Proceedings of the United States National Museum. Index VI of American Economic Entomology* is scheduled to appear early in 1942.

PERSONNEL

Dr. P. N. Annand was appointed Chief of the Bureau of Entomology and Plant Quarantine, to fill the vacancy caused by the death of Dr. Lee A. Strong. Dr. Stanley J. Carpenter, Entomologist of the Arkansas State Board of Health, has been granted a leave of absence to serve as Captain in the United States Army. A number of other entomologists have united with the service. Dr. P. J. Chapman, George W. Pearce and A. W. Avens received the Third Eastern Branch Award of the American Association of Economic Entomologists for the best contribution to the Science of Economic Entomology presented at the 1940 Atlantic City meetings.

NECROLOGY

Clarence P. Gillette, Director Emeritus of the Colorado Agricultural Experiment Station and widely known because of his aphid studies, died Jan.

4, 1941. Charles William Leng, Director of the Public Museum of Staten Island and well known through his *Catalogue of Cleoptera*, died Jan. 25. Levi W. Mengell, Director of the Reading Public Museum and Art Gallery, internationally known as an entomologist, died Feb. 3. Samuel Henshaw, Director Emeritus of the Museum of Comparative Zoology, and well known for his *List of Coleoptera*, died Feb. 5. Dr. Hugo Kahl, Curator of Entomology at the Carnegie Museum, Pittsburgh, died Feb. 19. Thomas H. Jones, for many years with the Bureau of Entomology and Plant Quarantine and well known because of his work on gipsy moth parasites and his research on Dutch elm disease, died Feb. 22.

Alexander Arsene Giaurt, a prolific writer on *Chalcidoidea* and for many years with the U. S. Bureau of Entomology, died May 2, in Queensland, Australia. Lee A. Strong, Chief of the U. S. Bureau of Entomology and Plant Quarantine, for many years in quarantine work on the West Coast, died June 2. Harvey A. Surface, for many years State Zoologist of Pennsylvania, died July 8. George A. Runner, of the U. S. Bureau of Entomology and Plant Quarantine, died July 11.

Myron H. Swenk, head of the Department of Entomology of the University of Nebraska, died July 17. Felix S. Puckett, Sr., Administrative Officer of the Pink Bollworm and *Thurberia* Weevil Control in Texas, died July 23. George A. Ficht, in European Corn Borer Investigations in Indiana, died July 29. Charles B. Wilson, a well-known student of water beetles and dragon flies, died Aug. 18. Ellison A. Smythe, Lepidopterist, died Aug. 19. James Troop, State Entomologist of Indiana from 1899 to 1907, died Oct. 14. Ralph Hopping, formerly in charge of Forest Insect Investigations at Vernon, British Columbia, died late in October.

XXII. BIOLOGY

BOTANY

By WILLIS H. BELL

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PALEOBOTANY AND EVOLUTION

In paleobotany, Andrews and Pearsall reported on the frontier formation of Wyoming, and Berry made notes on the Wilcox flora of Kentucky and Texas and the Pleistocene of Maryland. Harris studied the fruit and seed of *Caytonia*, Darrah listed ferns in American coal balls, while Chaney considered the bearing of forests on the theory of continental drift.

Bailey made a contribution to the theory of natural selection; Clark, Foster, Marat and Muller emphasized the importance of chromosomal changes in evolution, and Wright extended the "Age and Area" concept. Clausen, Keck, and Husey reported on plant speciation and environmental effects; Usinger gave problems in insect speciation in Hawaii; while Cushing expressed the value of the non-genetic mating preference as a factor in evolution.

CYTOLOGY

Again chromosomal studies and their implications to genetics and taxonomy were much in evidence. Longley observed teosinte chromosomes; Satina, Bergner, and Blakeslee reported on those of *Datura*; Smith gave their behavior in *Catalpa*; McClintock pointed to the stability of broken ends of maize chromosomes; Beal used *Calochortus* chromosomes for classification; Newcomer made chromosome counts in *Vaccinium*; Weeks gave the numbers for beach plum; and Longley gave the chromosome morphology in relatives of maize.

Gametogenesis and fertilization in various plants were the subject of investigations by Giles, Haupt, Johnston, Sax, O'Mara, and Love.

Beams and Zell examined the budding processes in yeast cells; Burkholder and McVeigh published notes

on multinucleate plant cells; Whitaker and Thompson made cytological studies in *Lactuca*; Sinnott and Block studied division in vacuolate plant cells; and Stebbins and Love reported on the cytology of certain forage grasses.

Pollister and Sorokin carried on research on chondriosomes and plastids, Ajello reported on the cytology of the fig, and Simpson studied the golgi apparatus.

Chromosomal aberrations by X-ray continued as evidenced by the work of Sax and others, while the investigations of Frank on the effect of sulfanilamide on nuclear conditions in plants points to a cytological interest in hormone substances.

GENETICS

A continuation of the work inducing artificial chromosome aberrations through the use of chemicals was continued by Dermen, Newcomer, Blakeslee, and Weddle. Anderson watched translocation effects in maize; Eyster tried to induce fertility in certain self-sterile plants; Lindstrom, Ratsek, Flory, and Yarnell reported on the genetic stability of diploid and tetraploid tomatoes and roses; and Moore found an internal genetic change which influenced the length of cotton fiber.

Genetic studies in relation to the problem of phylogeny were made by Greenleaf, Fischer, Darrow, Waldo, Thompson, Whitaker, and Kosar, while Jones and Longley followed the relationship between sterility and aberrant chromosome numbers in varieties of rice.

Adair, Immer, Reed, Stanford, Dundas, Myers, Chilton, Sprague, Bryan, Lyon, Suneson, Riddle, Briggs, and Shands reported on the inheritance of such characters as disease resistance, earliness, winter hardness, and yield. Middletown and Chapman listed an

association of smooth awedness with the spring growth habit in barley; Rhoades reported on rates of crossing over in the maturation of gametes in maize; Ware analyzed seed color and plant color as correlated with lint in cotton; and Atwood found a basis for the incompatibility in *Trifolium repens*.

Le Rosen, Went, and Zachmeister observed the relation between genes and the carotinoids of tomato; Dale reported a reversible variegation in petunia; Stroman gave an account of a heritable female-sterile cotton; and Powers and Lyon followed the inheritance of quantitative characters in tomato.

Lesley and Lesley listed parthenocarp in tomato; Schultz made studies on methods for breeding orchard grass; Zimmerman investigated pawpaw hybrids; Woodward studied pigment inheritance in the glumes of barley; Magruder and Wester added green cotyledon as a new character in lima beans; and Bair, Loomis and Burnham made studies on maize pollen.

ANATOMY AND MORPHOLOGY

Bailey and Howard started work on the *Utriculariaceae*, and Blaser studied the *Cyperaceae*. Bannan made vascular observations in various gymnosperms, and Barghoorn produced a study on the ontogenetic development and phylogenetic specialization of rays in the xylem of dicotyledons. Boyes reported on the embryo-sac development in *Plumbagella*; Cave followed megasporogenesis and embryo sac development in *Calochortus*; Bellows and Bamford showed the megagametophyte development for a triploid tulip; and Eckles did the megasporogenesis of *Nothoscordum*. Foster made studies of the shoot apex of several plants, Boke did the same for certain cacti, and Cross gave some histogenetic features of the shoot of *Cryptomeria*. Carpenter worked on the anatomy of Pine seedlings; Esau followed differentiation in the root of tobacco; and Popham did developmental studies in *Jatropha*, Quebell worked out the floral anatomy and

morphology of *Anemopsis californica*, and Saunders studied the flowers of *Primula* and *Salvia*. Sinnott and Bloch observed the relative position of cell walls in developing plant tissues, and Goldberg gave the life history of *Poltandra virginica*.

TAXONOMY

A detailed listing of those working in this field was given in 1939 and 1940. Since the workers and the groups under study were much the same, the trends during 1941 can be briefly listed. Among the various plant groups the same type of taxonomic work is recorded. New species were reported and nomenclatural changes made. Genera underwent critical examination, and families and genera were monographed. Several new manuals made their appearance and the floristics of various localities were recorded.

ECOLOGY

Conservation and improvement of plant resources were present in much of the ecological work of 1941. Booth reported on revegetation of abandoned farm land in Kansas and Oklahoma; Weaver analyzed water usage by certain native prairie grasses; and Costello and Turner showed what vegetative changes follow the exclusion of livestock from grazed ranges. Olmstead studied growth in range grasses; Stuckey observed the seasonal growth of grass roots; Tolstead watched secondary successions in South Dakota; and Clendenning correlated the effect of soil moisture and competition with the growth of *Heteropogon contortus* seedlings. Mueller made a study of the rhizomes of prairie plants; Sperry made a quadrat study of prairie and forest plantings; Hayes gathered information on environmental factors associated with forest fire danger; Van Gorder analyzed tree survival on the high plains; and Maissuraw evaluated the role of fire in the perpetuation of virgin forests of Wisconsin. Stoddart gave the grassland associations in Utah; Stoeckeler and Dortignac found snow drifts to be a factor in growth

and longevity of shelter belts on the plains; Cooper summarized man's use and abuse of vegetation; Davies, Ellwell, Daniel, and Fenton listed the effects of grazing, burning, and fertilization on yield and composition of pastures and woodlands; and Duncan studied root growth in woodland as correlated with soil type.

Successional studies were continued by Chapman, who made observations on salt marshes; by Ives, who watched forest succession in the Rocky Mountains; by Reid, who noted grazing effects on the succession in alpine grasslands; and Frolik, who reported on the peat lands of Wisconsin.

Pessin and Burleigh made notes on the forest of Horn Island, Miss.; Booth gave the importance of algae as pioneers; Parker and Whitfield studied the ecology of playa lakes in the plains; Ives made an analysis of montane and subalpine flora; and Potzger reported on the vegetation of Mackinac Island, Mich. Wynd made observations on the ecology of Crater Lake National Park; Brown published works on the vegetation of Roan Mountain; Thompson catalogued relic prairie areas in Wisconsin; while Buell studied bogs in Minnesota.

Pallesen and Laude correlated seasonal rainfall distribution with yield of winter wheat; Smith listed the factors controlling white pine development in New England; Aikman noted slope effects on climate; and Kienholz gave the seasonal course of height for some hardwoods of Connecticut. Johnson studied lake vegetation in Colorado; Wilde made observations on podzolic soils from a silvicultural viewpoint; Little noted the seasonal changes in New Jersey trees; and Chavannes recorded the known changes which have occurred in the forests of Wisconsin.

Work in paleocology continued. Hansen studied pollen from bogs of Washington and Oregon, while Lindeman gave the developmental history of a bog in Minnesota. Potzger summarized pollen spectra as time markers; Potzger and Wilson used sedimentation in lakes to trace post-

pleistocene forest migrations; Swickard compared the pollen spectra from bogs of Indiana; while Oostings and Humphreys used viable seeds to analyze past history of forests.

A number of dendrological investigations were made during the year. Hansen studied ring growth in conifers of Washington; Schulman and Friesner made dendrographic analysis; and Hawley used tree ring studies for dating in the Mississippi drainage area.

PHYSIOLOGY—ABSORPTION AND NUTRITION

Much work was done in this field during the year. Albrecht pointed out the influence of calcium and phosphorus on manganese intake; Batjer, Degman, Boynton, Reuther, and Cain reported on the effect of nitrogen, phosphorus, and potassium on growth in apple trees. The efficacy of various nutrient solutions was investigated by Hoogland, Arnon, Shive, Hayward, Long, and Raleigh. The role of boron and the other trace-elements again attracted much attention as evidenced by the work of Cook, Millar, Marsh, Blank, Drake, Sieling, Scarseth, and Hoagland. Rogers, Pearson, and Pierce were interested in the absorption of organic phosphorus; Burkhart and Page followed the distribution of nutrients in the plant; and the relationship of growth substances to nutrition was observed by Myers and Plant.

AUXINS AND GROWTH HORMONES

This still remained perhaps the most investigated phase of physiology. Avery, Creighton, Shalucha, Berger, Haagen-Smit, Leech, Bergen, Link, Eggers, Moulton, Robinson, Stier, and Stevens continued work in hormone extraction and estimation methods. Myers, Plant, and Addicott reported cellular effects of hormones, and Mitchell and Whithead listed the response of plants to extracts of maize pollen. Hitchcock, Zimmerman, Burkholder, McCown, and Gustafson used naphthaleneacetic acid to prevent fruit drop; Taylor and Robinson wrote on

the effect of indole—3 acetic acid upon respiration in oat seedlings; Worley and Grogan used hormones to induce defoliation; and English isolated wound hormones. Growth responses were watched. Blum, Lilly, Leonian and Stewart, and Nickerson and Thiman chemically controlled conjugation in yeasts.

GROWTH, DEVELOPMENT, AND REPRODUCTION

Kraus reported on histological reactions of bean plants to hormones, and Robbins gives the effect of factor Z in maize. Hancock studied growth rate and yield in cotton; Kempton observed elongation in Job's tears; Compton was interested in the growth of cotton fiber; and Cochran gives some observations on the growth of pimiento fruit. Pear-sall, Bengry, and Pratt got effects of darkness and nutrient solution on *Chlorella*; Sellei made growth experiments using fluorescent dyes; and Benedict studied light in relation to growth of grasses. Durell observed the effect of aeration of nutrient solutions on growth of tomato; and Davies investigated the growth effects of zinc sulfate. Murneck made carbohydrate-nitrogen observations on apple stems; toxicity of selenium was reported by Painter; and Robbins studied cultures of excised roots.

VITAMINS

Vitamin B was studied for its effect on grasses by Ahlgren, Myers, Jugenheimer, and Heyne, while Parker, Turrell, Bonner, and Murneck made comparisons between the effects of this vitamin and organic matter. Reid studied the metabolism of vitamin C in cowpeas and its relation to cell size in meristems; Robbins made observations on factor Z; and Laurill, Kepingler, and Donnelly report the effects of vitamin B on woody plants.

GERMINATION AND DORMANCY

Darlington made the 60-year report of Beal's vitality experiment; Flemion worked out a method for rapid determination of germination capacity; and Barton gave the relation of

air temperature and humidity to viability of seeds. Toole and Toole studied seed germination in relation to various factors, while Guthrie used certain sprays to break dormancy of peach buds. McDermott observed chemical changes in poplar buds during dormancy; Thornton and Denny give facts on the oxygen intake of gladiolus corms during storage; and Dexter, Kneen, Worzella, and Cutler made various observations on winter hardiness.

RADIATION EFFECTS AND PHOTOPERIODISM

Effects of ultraviolet light were observed by Chase, Gray, and Withrow, while Kempton, Maxwell, Smith, Kersten, Wort, and Johnson experimented with X-rays. Goodwin inhibited the growth of the first internode of *Avena* with light; Arthur and Harvil studied photoperiodism in *Digitalis*; and Biale used light and temperature to influence transpiration in lemon cuttings.

Werner and Edmundson studied length of day and its effect on flowering of potato; Allard and Evans did the same for grasses; Naylor made photoperiod studies on beet and dill; and Phillips observed day length and dormancy in tree seedlings, while Austin measured the photoperiod in other plants.

PHOTOSYNTHESIS

Regg and Swain studied the process in marine algae; Ruben and co-workers used heavy oxygen as a tracer in the study of photosynthesis; Smith records the utilization of radioactive carbon dioxide by sunflower; Dutton and Manning describe caretonoid-sensitized synthesis; Mackinney analyzed light absorption by chlorophyll solutions; and Rieke records quantum efficiencies of photosynthesis.

WATER RELATIONS

Biddulph used radiophosphorus to follow transpiration; Boon-Long and Rosene considered transpiration and water transport in relation to osmotic pressure; and Kramer studied soil moisture and its limiting effect on absorption.

XXII. BIOLOGY

METABOLISM

Miller studied the formation of certain gentiobiosides in tomato, and Ubrich reported the metabolism of certain organic acids in excised barley roots. Eaton gave the effects of sulfur deficiency on metabolism of sunflower, and Denny and Thornton observed carbon dioxide to retard the increase in sugar content of potatoes in storage.

RESPIRATION

Biale and Shepherd made observation on the respiration of citrus fruits when infected with fungi. Steward and Preston list the effect of salt concentration on the metabolism of potato discs, and Gould, Tytell, and Winzler made observations on respiration of yeast. Knott and Claypool noted effect of methyl-bromide fumigation on respiration of tomato fruits, while Laing correlated oxygen concentration and water pressure with growth of water plants.

PATHOLOGY

So much work is done in this field that one can do no more than list the trends of the investigations.

Of the diseases resulting from nu-

trient deficiencies, those involving a lack of boron and zinc were much studied. Nematodes diseases and methods for their control were reported. The bacteria responsible for crown gall and their nutrition was investigated. New bacterial parasites are mentioned, and the work with fire flight shows that investigators have been keenly interested in the manner of dispersal and control of plant pathogens. New diseases resulting from parasitic fungi were listed, and much work on the Dutch elm disease was done. Physiologic races were discovered in various pathogens and environmental effects upon the growth of these fungi was noted. Many studies indicate a keen interest in the subject of pathogenecity and host resistance. Sprays and dusts for disease control were improved and cultural practices tending to reduce infestation were advanced.

A tremendous amount of work with viruses was published, dealing with newly reported diseases caused by viruses, their transmission, and host relationships. Studies on the nature of viruses themselves, their environmental relationships, and distribution within their hosts were much in evidence.

ECONOMIC BOTANY

By H. K. WILSON

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GRASSES AND PHOTOPERIODS

Allard and Evans (*Jour. Agr. Res.* 62: 193-228, 1941) in studies of the growth and flowering of tame and wild grasses in response to different photoperiods found that the majority of the grasses, *Poa pratensis* *P. compressa*, *P. bulbosa*, *Dactylis glomerata*, *Muhlenbergia mexicana*, *M. schreberi*, *Phalaris arundinaceae*, *Bromus inermis*, *Phleum pratense*, *Agrostis palustris*, *Sorghastrum nutans*, *Hystrix patula*, and *Tripsacum dactyloides* exhibited marked responses. The majority of the species studied had long-day requirements, notably five strains

of *P. pratense* and more especially the strains Harpenden, Russian (Moscow), and Welsh strain S-50 originating in high European latitudes which appear to be diploid types with 14 somatic (2n) chromosomes. The authors noted a relationship between the geographic range of species and their length of day requirements.

VERNALIZATION AND REHARDENING OF PLANTS

Dexter (*Plant Physiol.* 16: 181-188, 1941) gives the results of research on the effects of periods of warm weather upon the winter hardened condition

of a plant. Under Michigan conditions where the experiments were performed, spring freezes rarely injure winter wheat. His results showed that rehardening after vernalization is possible but that rehardening is more likely to occur in unvernallized plants. Once a plant has been vernalized, it exhibits a tendency toward the elongation of the stalk. Such tendency is unfavorable for hardening, for the retention of hardening, and for rehardening. While rehardening is not rendered impossible by vernalization, it is made less probable. If the wheat plant develops an elongation of the stalk, the possibility of hardening adequate to withstand ordinary winter temperatures is probably gone.

HORMONES AND PLANT DEVELOPMENT

In a discussion of hormones in relation to plant development, Thimann (*Amer. Naturalist* 75: 147-153, 1941) notes the three principal types of hormones known in plants: (a) hormones controlling flowering, (b) substances belonging to the vitamin B group so necessary for root elongation, and (c) the auxins, a group of organic acids affecting many phases of growth and development. Little is known about the first group. One or more of the group comprising vitamins B₁, B₆, and nicotinic acid are essential for the growth of roots. The local application of auxin to almost any growing shoot causes rapid localized acceleration of growth, such growth being dependent upon the available auxin. Variation in supply of auxin may exert internal or external effects. The dwarf variety of corn (*nana*) was shown by Van Overbeek to have a rate of auxin not greatly below normal, but a considerably increased rate of destruction of the auxin formed. The author points out other relationships between hormones and plant development leading to a better understanding of their significance in plant physiology.

INFLUENCE OF TEMPERATURE ON PLANTS

Much research has been directed toward the influence of daily varia-

tion of temperature on development of plants. Potapenko and Zakharova (*Compt. Rend. [Dok.] Acad. Sci. U.R.S.S. N. Ser.*, 26: 278-282, 1940) investigating the photoperiodic and temperature relations of certain plants *Malus baccata*, *Pyrus ussuriensis*, *Cerasus* (= *Prunus*) *hesseyi*, and tomato, found that the photoperiodic requirements of each species varied during the course of the plant's development and that light was not always an inhibitor of growth. It is suggested that some plants may have developed adaptations which make it possible for them to grow more intensively on long or continuous illumination, while certain others, adapted to short days, give a stronger growth on continuous illumination because the nightly reduction of temperature favors them. If the temperature at night is kept at a high level the plants grow very slowly regardless of day length. The authors believe that, due to a decrease in temperature at night, growth is stronger at that time than by day in certain plants.

RESPIRATION IN GRAIN STORAGE

Investigators have recognized for some time the importance of respiration in the storage of grains. Bailey (*Plant Physiol.* 15: 257-274, 1940) presents a complete picture of the significant relationships in the respiration of the cereal grains and flaxseed. Curves showing the relationship between water content and respiration rate of stored cereals are expressed by an exponential formula approaching a linear form when the logarithm of the respiratory rate is recorded against the arithmetical progression of water content. Wheat, rice, and barley were much alike in these respects.

Oats exhibited less respiratory acceleration per unit increase in water content than did rice, barley, and wheat, while rye deviated still more. The author was unable to show a significant correlation between market grades of barley and oats and their respiratory rates at unit levels of water content of the grain. Shriv-

eled or small barley grains showed a higher respiratory rate than large or plump kernels. At every moisture level, flaxseed respired more vigorously than the cereal seeds. Bailey suggests that this difference may be due to the fact that the actual water content of the hydrophilic substances in flaxseed may be substantially higher than is indicated by the percentages of moisture as determined for the entire seed. The relative capacitance of cereal seeds may be more highly correlated with respiration rate than any other single chemical or physical determination hitherto used as a basis of prediction.

THE SPECTROGRAPH IN PLANT RESEARCH

In recent years there has been much interest in improved methods of plant analysis. The spectrograph appears to offer great possibilities in the field of plant research. Hibbard (*Mich. Sta. Tech. Bul.* 176, 1941) reports on the detection, distribution and mobility of certain elements in the tissues of plants growing under different conditions as determined by the spectrographic method. Ether, acetone, and water-soluble extractions were examined from a variety of tissues, and the ash was studied for potassium, calcium, magnesium, phosphorus, iron, and manganese.

The author makes certain generalizations: mobility is a matter of relativity. Iron and calcium should not be considered to be immobile. As the protoplasm controls metabolic processes and ion-organo compounds are built up and latter disaggregated, energy exchanges, respiration, and other vital processes are involved. Short days slow the total salt absorption while full light increases the rate of absorption of calcium, iron, and potassium. Phosphorus and magnesium absorption are not affected by day length. The roots and basal stem parts are low in minerals but the gradient increases upward. Calcium-deficient plants are higher in total salts than normal plants while potassium-deficient plants are lower. The plant's activity regulates its meta-

bolic reactions and in some unknown manner brings about greater absorption with one element and less with another and changes or modifies the distribution of the elements according to a definite plan undiscovered. The spectrograph affords an opportunity to develop techniques which should lead to a better approach to the numerous unsolved problems.

INFLORESCENCE OF GRASSES

Evans and Grover (*Jour. Agr. Res.* [U.S.] 61: 481-520, 1940) studied the developmental morphology of the growing point of the shoot and the inflorescence in the grasses, quack grass, perennial ryegrass, canary grass, timothy, tall oat grass, orchard grass, foxtail millet, and teosinte. The authors found that the inflorescence of all grasses was fundamentally alike in the early stages of development when the growing point is in a vegetative condition; ridges appear distichously in acropetal succession and from these the leaves develop later. If the environmental conditions favor reproductive development, the further increase of the ridges ceases, and protuberances, the homologs of vegetative buds, develop in the axils of the ridges. In the distal part of the rudimentary inflorescence, protuberances develop without the formation of subtending ridges. The resulting inflorescence differs widely in the different species as a result of modifications in the manner and extent to which the earliest protuberances occur and to the extent to which the axils are elongated.

BREEDING PROGRESS—CORN AND SUGAR BEETS

Advances in the improvement of corn through breeding have been phenomenal. Hayes and Johnson (*Jour. Amer. Soc. Agron.* 32: 479-485, 1940) reported on a study of the relation between the performance of inbreds in inbred-variety crosses and in single crosses. From their results with 12 single crosses between relatively low-combining inbreds, it appeared that single crosses between low combiners may be expected to

average somewhat lower in yield than single crosses between relatively high-combining inbreds when the single crosses are between inbreds of diverse genetic origin. Diversity in genetic origin was an important factor in obtaining maximum expression of hybrid vigor. In a comparison of 147 single crosses between inbreds of unrelated origin with recommended double crosses, 63 yielded significantly higher than double crosses used as a standard, indicating the desirability of selecting inbreds for use in double crosses from crosses between inbred lines with superior characters.

Hybrid vigor in sugar beets was reported by Stewart, Lavis, and Coons (*Jour. Agr. Res. [U.S.]* 60: 715-38, 1940). More than two-thirds of the hybrid progenies showed a significant increase in root weight as a result of hybrid vigor. The average root weight of 41 hybrids was 38.9 per cent greater than the weight of the Pioneer variety used as a control. Where the crosses involved strains unlike in richness of sucrose, the percentage in the hybrid tended to approach the average of the parents. It appeared that certain heterozygous varieties may be improved in specific characters as a result of top crossing with inbred strains capable of contributing desired characters. U.S. 217, a synthetically produced sugar beet variety, produced by intercrossing five of the strains showing promise of heterosis and resistance to *Cercospora* leaf spot, is a practical result of efforts to improve sugar beets through controlled crossing of inbred strains.

RUST RESISTANCE

Triticum timopheevi, a wheat species resistant to leaf and stem rust under certain conditions, was introduced into the United States in 1930. Shands (*Jour. Amer. Soc. Agron.* 33: 709-12, 1941) succeeded in transferring the disease resistance of the introduced species to common winter wheat (*Triticum vulgare*). The haploid chromosome numbers of *T. vulgare* and *T. timopheevi* are 14 and 21, respectively. To secure suitable seed

it was necessary to use *T. vulgare* as the female parent.

First generation plants were highly self-sterile in all crosses. The iodine test showed that about 95 per cent of the pollen grains were apparently sterile.

The experiments indicate that a number of the *T. timopheevi* characters including resistance to mildew, leaf, and stem rust were transferred to fertile types of *T. vulgare* winter wheat and that several of the plant lines were fertile in hybrids with other varieties of common wheat.

Watson (*Phytopathology* 31: 558-560, 1941) reports on the inheritance of resistance to stem rust in crosses with Kenya varieties of *Triticum vulgare*. The Kenya wheats secured from the Kenya Colony in East Africa have been reported as practically immune in all stages of growth to a number of physiologic races of stem rust in Canada. It appeared that both resistant Kenya varieties tested, 744 and 745, carried a single factor for resistance to stem rust.

Brittingham (*Jour. Hered.* 32: 57-63, 1941) was able to hybridize Canada bluegrass and Kentucky bluegrass. The Canada type was used as a female parent. The new hybrid was not as coarse as either parent, its leaves were dark green and were intermediate in length and width. Apparently it is vigorous and capable of spreading satisfactorily. The panicles were small but were large and heavy. From the data the author concludes that the hybrid between the species resulted from the union of an unreduced cell of *compressa* and an approximately reduced pollen grain of *pratensis*.

Susceptibility to crown rust has long been one of the major weaknesses of most oat varieties. Coffman, Humphrey, and Murphy (*Jour. Amer. Soc. Agron.* 33: 872-882, 1941) report on progress made in the development of crown rust resistant varieties using Victoria as a parent in combination with Nortex, Fulghum, Richland, and Red Rustproof. The first crosses were Victoria X Nortex and Victoria X Fulghum. Many selections were tested

for winter hardiness, yield and resistance to crown rust and smut in greenhouses at Arlington, Va. and Ames, Ia. as well as in the fields of cooperating stations of the South. Three of the most promising selections, Ranger, Rustler, and Fultex, have been distributed to farmers. Fultex is especially winter hardy for a red oat.

HYBRID VIGOR IN SWEET CORN BREEDING

Singleton (*Amer. Nat.* 75: 48-60, 1941) in an address before the International Genetics Congress reviewed the basic research underlying hybrid vigor and its utilization in sweet corn breeding. He indicates that at present the only way to determine the merit of an inbred line is to test it by crossing, although such analysis is now made at a much earlier generation than formerly. As there is little positive correlation between good growth in inbreds and hybrids, the author suggests that the genes responsible for hybrid vigor must be different from the normal growth-promoting genes. It is possible that the genes responsible for heterosis act more in the nature of complementary factors similar to the color genes A, C, and R that are responsible for a colored aleurone when all are present and a colorless aleurone when any one is lacking.

GENETIC RELATIONS IN COTTON

The genetic relations of sparse lint, naked seeds, and certain other characters of upland cotton are discussed by Ware (*Arkansas Stat. Bul.* 406, 1941). Selfed lines of upland cotton (*Gossypium hirsutum*) were used in crosses involving seeds free from lint and those covered with lint. Leaf shape also was studied. Seeds in the F_1 were free of fuzz but possessed abundant lint which was at a level somewhat lower than the high-lint parents. In the crosses of normal and okra-shaped leaves, the F_1 leaves were intermediate. In the F_2 the seed cover segregated according to a 1:2:1 ratio into fuzzy, intermediate or naked adherent, and naked classes.

In the naked-adherent class the seed coat condition was free of fuzz but with scattered broken-off lint base segments giving the seeds a downy-like appearance. When the F_1 was backcrossed to the fuzzy-seeded parent, the progenies segregated into fuzzy and naked-adherent classes, while the backcross to the naked seeded parent segregation was into naked-adherent and naked classes. The backcross ratio was 1:1.

Leaf shape segregated in the same manner as seed cover in F_2 . It appeared that seed cover and high lint are controlled by the same gene or by two very closely linked genes. More modifying factors appeared to affect lint development without changing the fuzz covering to any extent.

TIMOTHY RESEARCH

Wexelsen (*Jour. Hered.* 32: 227-231, 1941) working with chlorophyll-deficient seedlings of timothy (*Phleum pratense*) was able to demonstrate the following: albino, yellow, yellowish white with green streaks, yellow green, and light green. He found that normal green was completely dominant. For all types with the exception of yellowish white, three apparently independently homomeric factors were shown to be present. If but one of these factors was present in a heterozygous condition, the plant was normal green. In timothy, three and not more than three, homomeric factors were found, thus supporting the view that polyploidy is the basis of homomery.

STRAWBERRY CLOVER AS FORAGE

Strawberry clover (*Trifolium fragiferum*) has attracted considerable attention as a promising new forage. Weihing and Watson (*Colorado Farm. Bul.* 3: 3-4, 1941) report that sheep, grazed on strawberry clover at the rate of 17 head per acre, made an average gain of five pounds per animal for a period of three months. The strawberry clover thrives in low, wet soil and will withstand submergence for a considerable length of time. It is successful on soil too alkaline for

PERIODICAL PUBLICATIONS

most common pasture plants. It is suggested that the crop may be used to replace many of the salt grasses and sedges now growing in low wet places in Colorado.

Ammonium thiocyanate, while readily soluble, was less toxic than sodium chlorate. It decomposed rapidly in the soil with resultant stimulation of weed growth. Borax and colemanite were more lasting in their effects than chlorates but less than arsenic. While they did not possess the high inherent toxicity of other herbicides, they were successful in destroying the Klamath weed and bearmat. Their lack of toxicity to animals made them safe to use on the range.

Test plots substantiated greenhouse and laboratory results in proving that the inherent toxicity of the chemical, colloidal adsorption of the chemical by the soil, decomposition of the chemical, removal by leaching, salt content of the soil, and tolerance or physiological resistance of various weed species to toxic chemicals are variables pertaining to chemical weed control.

HERBICIDES

New methods of controlling weedy plants are always of interest. Helgeson and Gerbracht (*N. Dakota Sta. Bimo. Bul.* 3: 7-10, 1940) report on the use of Sinox, one of the newer herbicides. When applied on a field of Bison flax nearly in bloom the spray was successful on mustard while purslane and prickly lettuce were but little injured. The sprayed flax averaged 10.68 bushels per acre while the untreated flax averaged 4.59 bushels. Plants readily

killed by spraying included water pod (*Ellisia nyctelia*), marsh-elder, ragweed, field mustard, French weed (*Thlaspi arvense*), wild buckwheat, and the potato.

The Sinox treatment was used successfully in Wisconsin and Minnesota during 1941. The usual rate of application is 100 gallons of solution to the acre. The stock solution is diluted with water in the proportion of one gallon of Sinox to 100 gallons of water. Tests indicate that applications should be made well in advance of time of flowering of the flax.

Crafts, Bruce, and Raynor (*Calif. Sta. Bull.* 648, 1941) report on plot tests with chemical soil sterilants in California covering a period of eight years.

Sodium arsenite while rapid in its toxic action, decreases in effectiveness only slowly over a period of years. An application equal to five pounds of As_2O_3 per square rod may kill 95 per cent of the annual growth the first year and 80 per cent in the fifth year. This chemical was less effective on perennials with 10 pounds or more per square rod usually destroying all shallow-rooted species. Five pounds of arsenic trioxide per square rod normally killed about 95 per cent of the annual vegetation from the second to the sixth year. It had practically no effect on most perennials. Sodium chlorate was effective on both annuals and perennials and leached rapidly. A combination of sodium chlorate, with arsenic trioxide or sodium arsenite, combined the rapid action of the chlorates with the lasting properties of the arsenical compound.

PERIODICAL PUBLICATIONS

American Botanist
5257 Hinesley Ave., Indianapolis,
Ind.
American Journal of Botany
Botanical Society of America, 1086
N. Broadway, Yonkers, N.Y.

American Naturalist
3941 Grand Central Terminal, New
York City.
Annals of the Entomological Society
of America
Ohio State University, Columbus,
O.

XXII. BIOLOGY

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| <p><i>Botanical Gazette</i>
5750 Ellis Ave., Chicago.</p> <p><i>Botanical Review</i>
Botanical Garden, New York City.</p> <p><i>Ecology</i>
1000 Washington Ave., Brooklyn,
New York City.</p> <p><i>Journal of Economic Entomology</i>
George Banta Publishing Co., Menasha, Wis.</p> <p><i>Journal of Experimental Zoology</i>
36th Street and Woodland Ave.,
Philadelphia.</p> <p><i>Journal of Mammalogy</i>
American Museum of Natural History,
New York City.</p> | <p><i>Journal of Morphology</i>
36th Street and Woodland Ave.,
Philadelphia.</p> <p><i>National Horticultural Magazine</i>
American Horticultural Society,
Washington, D.C.</p> <p><i>Quarterly Review of Biology</i>
Mount Royal and Guilford Aves.,
Baltimore, Md.</p> <p><i>Scientific American</i>
24 West 40th Street, New York
City.</p> <p><i>Yale Journal of Biology and Medicine</i>
New Haven, Conn.</p> |
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COGNATE SOCIETIES AND RESEARCH INSTITUTIONS

(For further information, the reader may address the following organizations)

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| <p>ACADEMY OF NATIONAL SCIENCES OF
PHILADELPHIA, Logan Sq., Philadelphia, Pa.</p> <p>AMERICAN ASSN. OF ECONOMIC ENTOMOLOGISTS, College Park, Md.</p> <p>AMERICAN ASSN. OF MUSEUMS, Smithsonian Institution, Washington, D.C.</p> <p>AMERICAN MICROSCOPICAL SOCIETY, Kansas State Agricultural College, Manhattan, Kan.</p> <p>AMERICAN MUSEUM OF NATURAL HISTORY, Central Park W. and 79th St., New York City.</p> <p>AMERICAN NATURE ASSN., 1214 Sixteenth St., Washington, D.C.</p> <p>AMERICAN NATURE STUDY SOCIETY, 5540 Pershing Ave., St. Louis, Mo.</p> <p>AMERICAN ORINTHOLOGISTS' UNION, Ohio State University, Columbus, Ohio.</p> <p>AMERICAN PHYTOPATHOLOGICAL SOCIETY, Bureau of Plant Industry, Washington, D.C.</p> <p>AMERICAN SOCIETY OF NATURALISTS, Brown University, Providence, R.I.</p> <p>AMERICAN SOCIETY OF ZOOLOGISTS, Princeton University, Princeton, N.J.</p> <p>BOSTON SOCIETY OF NATURAL HISTORY, 234 Berkeley St., Boston, Mass.</p> | <p>BOTANICAL SOCIETY OF AMERICA, Connecticut College, New London, Conn.</p> <p>ENTOMOLOGICAL SOCIETY OF AMERICA, (Clarence H. Kennedy, Editor), Columbus, Ohio.</p> <p>EUGENICS RESEARCH ASSOCIATION, Cold Spring Harbor, New York.</p> <p>FIELD MUSEUM OF NATIONAL HISTORY, Roosevelt Road and Lake Michigan, Chicago, Ill.</p> <p>MUSEUM OF THE COMPARATIVE ZOOLOGY, Cambridge, Mass.</p> <p>NATIONAL ASSN. OF AUDUBON SOCIETIES, 1775 Broadway, New York City.</p> <p>NEW YORK MICROSCOPICAL SOCIETY, American Museum of Natural History, New York City.</p> <p>NEW YORK ZOOLOGICAL SOCIETY, 90 Broad St., New York City.</p> <p>PALEONTOLOGICAL SOCIETY OF AMERICA, American Museum of Natural History, New York City.</p> <p>REPTILE STUDY SOCIETY OF AMERICA, INC., 536 E. 84th St., New York City.</p> <p>UNITED STATES NATIONAL MUSEUM, Tenth and Constitution Ave., Washington, D.C.</p> |
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DIVISION XXIII

MEDICAL SCIENCES

MEDICINE, PHYSIOLOGY, AND PATHOLOGY

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GENERAL

During 1941 there was a great deal of active work in extending the usefulness of the chemotherapeutic agents, particularly by the introduction of new compounds or newer techniques for the better utilization of those previously known. Knowledge of the disease-producing viruses has been enhanced, and the problems of the epidemiology of poliomyelitis are being gradually elucidated. Much new work has been done regarding the preparation and use of anticoagulants, particularly as to the administration of heparin. No portion of medical knowledge has remained static, new concepts are developing as regards the mechanism of such a well known disorder as diabetes mellitus; the older theories as to the cause for acidosis complicating this disease are becoming completely outmoded; and better explanations are being evolved for the mode of action of insulin. An entirely new cause has been discovered in the case of a well known blood disorder of infancy, and its prevention made possible. The newer vitamins of the B complex and vitamin K have also been subjected to considerable new investigation.

SULFONAMIDE CHEMOTHERAPY

Research.—There will undoubtedly be further additions to the list of life-saving sulfonamide drugs as a result of active research in many laboratories. At present three compounds

surpass all others in their effectiveness and applicability. These are sulfadiazine, sulfathiazole, and sulfquanidine.

Sulfadiazine has certain definite advantages; it combines effectiveness with extremely low toxicity. It has become the drug of choice in the treatment of pneumococcic pneumonia; it is effective in the treatment of streptococcic infections and meningococcic meningitis, and rivals the use of sulfathiazole in the treatment of gonococcic and staphylococcic infections. Sulfadiazine is absorbed somewhat more slowly than sulfapyridine but effective blood levels are readily obtained by oral administration; effective blood levels are reached in about six to eight hours following initial administration by mouth; this delay may be compensated for by immediate treatment or may be started by giving sodium sulfadiazine intravenously. Sulfadiazine varies in one important particular from other sulfonamides; its conjugated form, acetysulfadiazine, is more readily soluble and excreted, thus minimizing the damaging effect upon kidney excretion caused by the aggregation of insoluble crystals, a not infrequent complication when the older drugs were employed. Long recommends that dosage of sulfadiazine be calculated on the basis of 0.1 gram per kilogram of body weight in a case of pneumonia of average severity; use of the drug is relatively free of the

previously annoying gastric intolerance. Its chief drawback has been the relatively higher cost and at the present time its possible scarcity because of the need for the armed forces. Safe and effective blood levels are easily maintained at a range between five and 15 mg. per cent, the drug passes readily into various body exudates; it appears in the spinal fluid in a concentration approximately two-thirds that of the blood. In spite of its fewer toxic manifestations, precautions must be observed, particularly with respect to urinalysis and blood counts.

Sulfathiazole has essentially the same toxic manifestations as the older sulfanilamide and sulfapyridine although there is less gastric intolerance than in the case of the latter. It is very effective against pneumococcic pneumonia but its greatest prominence depends upon its superiority against staphylococcic infections and in the treatment of gonorrheal infection of the male and female, including complications of these illnesses. They have shown less tendency to recur than after therapy with the older compounds.

Sulfaquanidine is poorly absorbed from the gastrointestinal tract, and one should not attempt to establish effective concentrations in the blood. The drug is administered orally and is found largely in the intestinal tract where it exerts a bacteriostatic effect on organisms present, particularly *E. coli* and dysentery organisms. It appears also to be of prophylactic value when administered by mouth to patients who have been or are about to be subjected to surgery of the colon.

In acute bacillary dysentery the initial dosage is 0.1 gram per kilogram of body weight followed by a maintenance dose of 0.05 gram per kilogram every four hours day and night. As the number of stools becomes diminished, the interval between doses is lengthened but should not be continued longer than for a period of two weeks. This drug has become, therefore, a valuable adjunct in the treatment of a group of diseases of the large intestine heretofore

lacking any direct method of attack and in many instances being severe or fatal, particularly in the case of young children. In colonic surgery the need for either reduced virulence of the fecal content or the improvement of the patient's immunity has always been important. The high postoperative mortality has often been due to the contamination of the peritoneum or of the wound by the fecal content of the opened bowel. Sulfaquanidine appears to be less toxic than the other sulfonamides, probably because of its poor absorption. When prolonged administration is in effect, the same precautionary examinations of the skin, urine, and blood must be observed as in the case of the other analogues.

VIRUSES AND VIRUS DISEASES

Control Measures.—The nature of viruses is still an open question; their nature lies near the line that separates infinitely small living organisms from inanimate active agents. They are of great interest and importance because they produce diseases many of which are epidemic in character. The control of one virus malady, small pox, was accomplished even before the relationship of bacteria to disease was appreciated. Most of the viruses that affect man seem to enter and leave their host through the upper respiratory tract. None of the modern sanitary improvements which have done much to decrease certain kinds of disease have been effective in the control of many virus maladies. Control measures have been found for some of the virus diseases—small pox and yellow fever—and there is reason to believe that prevention or control methods will be found to combat others. They represent communicable diseases and result from the spread of virus from an infected patient or animal. Included also among others in the group of virus diseases are rabies, fever blisters, psittacosis, fowl pox, foot and mouth disease, hog cholera, dog distempers, equine encephalitis, epidemic influenza, poliomyelitis, certain types of fowl tumors,

and various yellows and mosaic diseases of plants. Most virus diseases are followed by a lasting immunity in recovered hosts, and as a group viruses are smaller than ordinary bacteria. In the case of tobacco mosaic, a large protein molecule was isolated as being the causative virus; a previously considered non-living substance was discovered to be endowed with the property of reproduction and the ability to produce disease.

The virus of anterior poliomyelitis has been carefully studied and can be readily identified by its effect upon animals. Protective inoculation of attenuated virus into human beings has been found to be hazardous because of danger of causing the disease in certain instances by use of the living virus. Protective sprays of the nasopharynx have failed to prevent infection, and it has been discovered within the past few years that the virus need not enter the respiratory tract to produce the disease. In a recent epidemic the virus was again isolated from the feces of patients with proven infection and was present in stool collected one month after the onset of symptoms. Virus was also found in presumably healthy children who had been in contact with adult members of the families who became ill with poliomyelitis. In one case the virus was found in the feces of a healthy adult one to two months after contact with a patient who died of the disease. All of the normal residents of this community not in contact with ill patients had negative stools for virus. This discovery of recent years, therefore, has been abundantly confirmed and brings up the very important question as to the probable role of sewage in the spread of infantile paralysis.

Encephalitis.—It is known that the western equine (horse) encephalitis can affect human beings and seems to be related to the "St. Louis" type of encephalitis and that both of these illnesses may be spread through the bite of an intermediary vector. The "assassin" bug was found to be infected with the virus in areas of the Middle West where horses had died

of this illness, and the rat was discovered to act as the reservoir host upon whom the young bugs feed until they are ready to fly. The St. Louis type of human encephalitis can be transmitted to horses and shows many properties in common with the equine encephalitis, and even poliomyelitis cases have been discovered in close association to these other two diseases. Both the mosquito and the wood tick are also considered as possible vectors in the dissemination of these illnesses.

Spread of Poliomyelitis.—The disease, poliomyelitis, has assumed epidemic proportions only in the last 50 years, although probably existent in sporadic form for centuries. It is prevalent in the temperate zones in the late summer and early fall. Children between the ages of two and three, males more frequently than females, are most likely to be affected although there is a recent tendency to attack older individuals. It seems that individuals of blood group B are more resistant than those of other blood groups. The disease may be transmitted by carriers, by milk, water, or insects, or directly by droplet contact. The incubation period is seven to ten days but the period of communicability is indefinite. In fatal cases the virus is found predominantly in certain regions of the nervous system and in the contents and walls of parts of the alimentary tract. By some workers the virus is thought to disseminate itself from the gastrointestinal tract along the non-medullated fibers of the autonomic nervous system; along the olfactory nerves with the nasopharynx as the portal of entry. Since the disease has been transmitted unwittingly by the injection of attenuated virus vaccine, it is also conceivable that a virus infected insect-puncture might likewise inoculate the causative agent. It is possible that all of these modes of invasion are effective, but with one major method of spread functioning during the critical season, such as the question of contaminated bathing facilities or the increased maturation of a specific vector.

ANTICOAGULANTS**Heparin in Thrombosis Control.**

—An important clinical application of coagulation studies has been in the attempt to use heparin to control thrombosis and embolism under pathologic conditions and after surgical operations. Several groups of workers have been engaged in these investigations, especially Best, Murray, and their collaborators at Toronto, and Jorpes and his colleagues at Stockholm. The Toronto workers have shown in animal experiments that intravascular injections of heparin serve to prevent thrombus formation after mechanical or chemical injury to the lining of the blood vessels or heart, and that arterial anastomoses, embolectomies, and transplantation of organs may be performed after heparinization with less danger of thrombosis (clotting) than in similar operations without heparin. The application of these experimental results to clinical cases is in progress and the reports received so far are promising.

Murray reports 12 successful arterial embolectomies in which the patients were kept heparinized for from three to 14 days after the operation; 50 cases of thrombophlebitis in which the treatment was followed by disappearance of pain, reduction in edema, and relatively rapid recovery; 22 cases of massive pulmonary embolism in which there was definite improvement; four successful cases of resection of a portion of the intestine after mesenteric thrombosis; one successful venous graft in a case of popliteal aneurysm. The most impressive results reported concern the effect of heparin in preventing postoperative thrombosis and embolism, a very serious complication. None of these postoperative complications was in a series of 400 cases treated by the method of continuous intravenous injection of heparin in contrast to their usual previous experience among such a large group of operated patients. Other workers have obtained similar good results. A report from the Mayo Clinic shows favorable results after the use of heparin in cases where thrombosis or pulmonary embolism

had already occurred. In cases of thrombosis of the central vein of the retina, with its bad prognosis of ultimate blindness, heparin has been used with seeming success. Many of the conditions above enumerated presented situations which were difficult of direct attack previous to the use of this agent; the outcome was often fortuitous and not amenable to alteration by means previously at hand.

The anticoagulant effect of heparin is due to its reaction with some constituent of the blood to form an antithrombin. It can neutralize thrombin if present, or can prevent the conversion of prothrombin to thrombin. This inhibitory substance, heparin or the heparin-albumin complex, is concerned in maintaining the normal fluidity of the circulating blood. The general plan of heparin treatment is to elevate the clotting time of the blood to an arbitrary optimum level. The usual method is to administer the material in a continuous intravenous drip so that there is an evenly maintained prolonged clotting time, in contrast to a high and low intermittent effect obtained by the simpler method of periodic intravenous injection of a given amount of heparin. This latter procedure is satisfactory for patients no longer confined to bed. A two per cent solution is usually prepared by adding one 10 cc vial of heparin to 500 cc of physiological saline. A clotting time of about 30 minutes seems to be a desirable optimum, one which should prevent intravascular clotting but not result in spontaneous hemorrhages. (Normal clotting time is about three to five minutes.) Heparin has an undoubted value during surgery upon blood vessels and in the treatment of intravascular thrombosis already known to be present. The prophylactic use after surgery is open to question. The expense is considerable, and many surgeons avoid such complications by the judicious carrying out of a simple course of exercises in bed.

Use of heparin in subacute bacterial endocarditis in conjunction with chemotherapy remains a dis-

puted point. The disease has in the best resulted in a very high percentage of deaths; recoveries were very rare. By the use of the anticoagulant it was felt that the laying down of blood clots upon the ulcerated infected valve could be prevented and the bacteria more directly affected by the circulating sulfonamide drug. Whether the anticoagulant is necessary is as yet uncertain; there is no question that more cases are being reported cured than before modern treatments were begun. Perhaps the drugs alone would have sufficed in the successfully treated patients. The use of heparin is not without danger, particularly since the cardiac reserve in many of these patients is already seriously impaired and unable to assume the additional burden imposed by the introduction of considerable amounts of intravenous fluid necessary for the heparin treatment.

Dicoumarin.—Another anticoagulant, dicoumarin, has been isolated as the active substance contained in spoiled sweet clover and responsible for the bleeding disease of cattle. This was one of the diseases investigated by Quick in developing his theories about vitamin K. This substance is much cheaper than heparin and can be taken by mouth. Its anticoagulant effect is only gradually built up over several days so that it can not be utilized for an immediate necessity. For such an emergency the initial effect may be obtained by the use of heparin by infusion, then the level of increased coagulation time maintained by the use of dicoumarin. Periodic determination of the clotting time must be made to detect excessively prolonged values, particularly if this combined method is utilized in which case a transfusion may be needed to prevent excessive spontaneous bleeding.

NEWER CONCEPTS REGARDING DIABETES MELLITUS

Sugar Question.—Much debate has been made as to whether the diabetic condition is characterized by an overproduction or by an under-utilization of sugar. There is now no doubt that

the completely diabetic patient is able to oxidize dextrose, and because of the increased concentration of sugar in the tissues the amount of dextrose oxidized may not be much short of that which the animal would use under normal conditions, with a normal concentration of blood sugar. There is also no doubt that an appreciable over-production of sugar by the liver occurs.

Ketosis is a well recognized condition in the diabetic patient. The condition is manifested by the presence in the blood and urine of abnormal amounts of "acetone bodies" (acetone, aceto acetic acid, and beta hydroxybutyric acid). Methods are available for the estimation of each of these constituents or for the combined estimation of all three. They are produced in the liver. They may be formed from certain of the amino acids and from fatty acids. We know that these "acetone bodies" are formed in greater amounts at times when there is reason to believe that oxidation of fat is producing much of the body's energy requirements. It was generally taught that their production at such times is due to the absence of oxidation of carbohydrates. Carbohydrates were regarded as anti-ketogenic substances ("fats burn in the fire of carbohydrates"). Stadie has pointed out, however, that in the absence of carbohydrate, if fat is available it is utilized for energy in the form of its ketone bodies which are formed in the liver and in the muscle tissues. The body is not able to utilize more than a certain percentage of these products, the non-utilized portion is excreted into the urine; being acid products they withdraw the body bases with a resultant systemic acidosis. This conception is entirely at variance with the generally accepted theory that the acid bodies were not utilized for energy and were simply abnormal fatty degradation products due to inadequate carbohydrate metabolism.

Insulin.—A considerable advance in insulin therapy was made by the combination of insulin with protamine. The method was further perfected by

the discovery that the addition of a small amount of zinc salt not only prolonged the effectiveness of the insulin but stabilized the mixture with protamine. Such solutions are absorbed from the site of injection slowly, thereby simulating more closely the secretion of normal pancreas. Studies continue to be made on the problem of the administration of insulin by mouth. In the main, efforts have been made to combine insulin with various materials—dyes, phenolic substances, tannic acid and others which will protect the protein molecule from destruction by the intestinal enzymes. No satisfactory application of these substances has yet been made to the treatment of diabetic patients. One substance receiving publicity has its effect of lowering the blood sugar by damaging the liver, a highly unphysiologic and unsound method.

When insulin is injected, there is a decrease in the concentration of blood sugar. Some of the removed sugar is converted into muscle glycogen. In diabetics, insulin increases the deposition of liver glycogen; in a normal person the use of insulin does not have this effect so that insulin should not be given in the case of a non-diabetic patient in whom it is desired to build up the liver reserves of glycogen; in this case, sugar alone suffices. When the insulin supply is deficient the rate of glycogenesis in the liver is increased. Administration of insulin decreases the production of sugar from amino acids; the production of sugar from fat is still a debated question. Insulin also exerts its effect upon other tissues, aside from the liver. The normal usage of sugar by the muscles is dependent upon the correct supply of insulin. Insulin in conjunction with other substances appears to fulfill the role of arbitrator as to the relative amounts of the different sources of energy—carbohydrates, fat, and protein—which shall be oxidized, also as to the extent of the interconversion of these materials.

Diabetes and the Pituitary Gland.
—Diabetes was known to occur fre-

quently in patients who had tumors of the pituitary gland. In 1930 Housay showed that experimental diabetes, produced by removing the pancreas in dogs, could be ameliorated in turn by removing the pituitary gland. Subsequently it was discovered that injection of anterior pituitary extracts produced not only a diabetic state during the time of the administration but was able to bring about a condition of permanent diabetes associated with lesions of the insulin-producing islet of the pancreas. The effect is due to an over-stimulation of the beta cells of the islet which eventually lead to their exhaustion and failure of spontaneous restoration. During the initial stage of injection the resultant diabetes seems to be due to an increased need of the body tissues by effect upon tissues of the body other than the pancreas. This type of diabetes in dogs may also have its counterpart in human beings, particularly as seen in those fatal cases where examination of the pancreas shows insufficient damage to explain the severity of the illness. Permanent diabetes might thus be voided by proper dietary measures combined with the early use of insulin injections sufficient to protect the natural sources from being over-stimulated and exhausted. Dr. C. H. Best of Toronto has been a strong advocate of treatments designed to prevent diabetes in susceptible individuals by the timely use of proper diets and insulin.

VITAMIN B DEFICIENCY

Gastrointestinal Tract.—A number of vitamin B deficiency states are well understood; these include beriberi and pellagra and the more recently described ariboflavinosis. A new deficiency state affecting chiefly the gastrointestinal tract has been fairly well identified due to inadequate intake and utilization of the B complex. It was discovered chiefly among patients utilizing a high carbohydrate low fat diet either self imposed because of economy or through bad habits, but in some cases prescribed because of overweight, gall

bladder disease, ulcer, or some other disorder. Frequent complaints were easy fatigability, lack of appetite, instability, and personality changes. Gastrointestinal symptoms were frequently encountered: gaseous, generalized abdominal distention following meals, abdominal distress, diarrhoea and constipation. Since many of these complaints were not unlike those encountered in functional disorders, certain diagnostic criteria have been established to identify the disorder as a deficiency state.

A flat dextrose tolerance curve indicating defective gastrointestinal absorption has been a fairly characteristic finding; X-ray studies of the small intestine reveal derangement of motility and mucosal pattern. In the more advanced cases a slow rate of transit of the opaque material, hypotonicity, segmentation, and even obliteration of the mucosal folds. The mucosal changes are most evident in the upper third and the segmentation in the middle third of the small intestine. With appropriate treatment the mucosal pattern of the upper jejunum returns to normal first, the segmentation may gradually disappear, and the hypomotility may be altered to hypermotility. The use of whole vitamin B complex by mouth or, if ineffectual, by the hypodermic route will produce favorable alteration of the objective abnormalities and improvement of the complaints in those patients in whom the findings are definitely due to B complex deficiency. Low values or absent hydrochloric acid in the stomach is another frequent concomitant, and this defect in itself may facilitate the vitamin B deficiency by allowing destruction of the ingested vitamin B by the alkaline juices of the duodenum. The use of crude liver extract as a source for the vitamin has in some of these patients resulted in a striking amelioration of symptoms.

Ariboflavinosis is another of the more easily recognized deficiency states of the B complex avitaminosis. Soreness of the lips and tongue and of the fauces and itching of the vulva and scrotum may be present.

The ocular manifestations are of especial importance in its early recognition and identification. Photophobia, burning and itching of the eyes, a sensation of eye strain or rapid visual fatigue, poor distant vision and blurred vision in poor light are some of the specific symptoms when they occur in the absence of any demonstrable refractive error. A slight circumcorneal congestion, due to an arcade of new formed capillaries of the limbic plexus is a diagnostic finding. As the avitaminosis progresses, interstitial keratitis may develop. Other signs to appear are cheilosis, maceration of the commissures of the lips with fissuring also about the nasal orifices. The tongue shows flattening of the papillae, and its normal pink is replaced by a purplish red. Riboflavin deficiency is believed to interfere with the mechanism of oxidation in the tissues, and it is thought that the excessive vascularization may be a response of tissues to a poor oxidation mechanism; the blood channels seeking direct access to the tissues in the absence of this enzyme for the transportation of oxygen.

THE ACTION OF VITAMIN K

The action of vitamin K in preventing hemorrhage is through its ability to stimulate the formation of prothrombin, methods are available for determining the relative amount of prothrombin in the blood. It has been shown that prothrombin is produced in the liver, that it is constantly being used up or destroyed especially in the lung, and that bile salts are necessary for the satisfactory absorption of vitamin K from the intestine. It is also now known that the hemorrhages occurring in hemorrhagic diseases of the new-born and in obstructive jaundice are due to prothrombin deficiency, and if the liver is not too seriously affected, this deficiency can be corrected by the administration of synthetic vitamin K (2 methyl 1, 4 naphthoquinone) and bile salts by mouth or of the former alone by injection. If the prothrombin content of the blood fails to show a satisfactory increase

after adequate administration of this synthetic vitamin, it may be assumed that there is deficient liver function. We thus have another technique for the evaluation of liver damage upon which important decisions as to surgical procedures frequently depend.

ERYTHROBLASTOSIS FETALIS

This disease of the new-born has long been recognized but never understood. The infants are born often premature, at times bloated with fluid, and often intensely jaundiced (icterus gravis of the new-born). The afflicted infant is usually not the first pregnancy which may have been perfectly normal. There may be a long subsequent series of abnormal pregnancies producing premature or macerated or jaundiced or anemic foetuses some of which eventually get well by the use of transfusions. The blood of the foetus shows, aside from the anemia, large numbers of immature red blood cells (erythroblasts), and the liver and spleen are usually considerably enlarged.

The discovery of the cause and knowledge as to the prevention of this disorder really represents a remarkable piece of work. It was discovered

by Dr. Philip Levine to be due to an iso-immunization process whereby the mother's blood contained a factor different from that of the father. This factor was discovered by Drs. Landsteiner and Wiener and named the Rh factor. If the mother possesses an Rh negative factor and the father and child are Rh positive, the mother's blood sets up an immune reaction against the child's blood resulting in the destruction of the infant's blood with evidence of regeneration in the form of excessive erythroblastosis. This happens particularly if the mother receives a transfusion of blood from such a father. Indeed a mother known to have an Rh negative factor should under no circumstances receive blood from an Rh positive donor even though their general blood groupings may be the same. When the mother and father are tested before delivery it can be predicted that, because of the presence of these two antagonistic blood factors, the unborn infant will have this disease and Rh negative donors may be arranged in advance as a lifesaving measure for the infant, whose abnormal blood must be replaced by normal blood possessing the Rh negative factor.

SURGERY

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GENERAL

Each year it is necessary to remind the reader that progress in this branch of medical art and science can not be measured by the short space of a twelvemonth. There are so many workers trying to improve the results of treatment in surgical as well as medical diseases that each one must be aware of the contributions of those who have gone before and try to add a little to the sum total of their experience. It is rarely possible to make a wholly original discovery. Each advance step must be critically reviewed by the discoverer and then subjected to the scru-

tiny of others and tested by their experience. The promptness of its recognition as significant depends upon its application to the experience of others. Rarely does this occur within five years, often not before ten, and sometimes it has to be completely and independently rediscovered. It is more correct, therefore, to say that there have been significant advances rather than significant discoveries in the field of surgery in 1941. These advances may be grouped in nine categories—(1) Anesthesia; (2) Surgery of the Lungs; (3) Surgery of the Heart; (4) Surgery of the Intestines; (5) Surgery of the Liver;

(6) Surgery of the Pancreas; (7) Blood and its Substitutes; (8) Surgical Infections; (9) War Surgery.

ANESTHESIA

Studies and Tests.—The physiology and pharmacology of anesthetics are being studied more widely and more intensively than ever before. New preparations are being tried in order to find agents which will decrease the risk of damage to nerve centers, liver, kidney and other tissues, and at the same time yield the maximum degree of relaxation or an adequate degree of unconsciousness. The ideal anesthetic is one which will promptly produce unconsciousness or loss of sensation and complete muscular relaxation with prompt restoration of function after the need is over and at the same time have no harmful effect on any of the body tissues or organs.

Application.—The afferent or efferent nerves immediately concerned with the site of operation and the approach to that site, may be blocked directly by a number of anesthetics. These may be injected locally where their action may remain for the necessary period of operation and then disperse without obvious harm either locally or generally. No striking progress has recently been made in this field. Novocaine has for a long time filled this requirement. This same group of drugs may be used intraspinally to block the nerves as they enter or leave the cord but they are subject to diffusion through the spinal fluid. A real advance has been made in this field by the use of continuous or intermittent injection of small quantities of the anesthetic agent, the total amount depending upon the variable length of the operative procedure. This obviates the necessity of giving a large quantity at one time which may spread to regions of the cord which do not need to be blocked and which may cause a dangerous drop in blood pressure. The continuous or intermittent spinal anesthesia technique with novocaine permits long operations with a wide margin of safety, and motor function

at least, can often be restored promptly by removing the residual anesthetic at the end of operation. Occasionally in long operations restlessness or apprehension may have to be treated by sedatives or mild narcotics.

Pentothal Sodium.—Anesthetics which result in loss of consciousness have to be administered by the subcutaneous or intravenous route or be absorbed by inhalation through the lungs or by instillation in the rectum. Of the intravenous anesthetics, pentothal sodium seems to be generally replacing evipal because of its greater safety and more prolonged effect, and it has been increasingly used in the past year for short and even long operations when complete relaxation was not desired, or to quiet restlessness or apprehension in the long continuous spinal anesthetics. It has been used with increasing frequency in the treatment of war wounds and burns where it has obvious advantages over inhalation anesthetics, and methods have been devised to give it continuously.

Avertin has continued to merit the favor of the patient as a basal anesthetic. The relief from the fear of smothering from the inhalation gas and the apprehension of the approach to the operating room is most grateful to the patient, and the drowsiness which usually follows the operation for a day or two carries the patient through a great deal of the postoperative discomfort. There are, however, certain definite contra-indications to the use of avertin which are becoming more clearly recognized by anesthetists, and the occasional damage to liver or the persistent fall in blood pressure or the depression of respiration, when these were not expected, have led to some restriction in the use of avertin during the past year. There is great need for a drug which will have the advantages of avertin without the risks.

Inhalation Anesthetics.—Of the inhalation anesthetics, there has seemed to be a reversion to ether with gas oxygen induction during the year as it is being recognized that the safety factor is greater both with

regard to the pharmacology of the drug and the explosion hazard, which is still of considerable importance when cyclopropane and ethylene are used. Vinethene has had some measure of use during the year and has the advantage of a quick induction and a quick recovery but full understanding of its risk and limitations will have to await further experience.

Anesthetic Administration.—There have been improvements in the technique of anesthetic administration, particularly in chest surgery. The mortality in this field has been materially reduced by intratracheal intubation which will permit positive pressure when needed as well as suction. The head down position and supplementary block of vagus and phrenic nerves also add to the ease of operation and minimize the risk.

SURGERY OF THE LUNGS

An ever increasing number of surgeons are gaining experience and improving results in the treatment of pulmonary tuberculosis, pulmonary cancer, bronchiectasis, and lung abscess. While the incidence of pulmonary tuberculosis is decreasing, those cases which do occur not infrequently require surgery for their cure. And the scope of surgery in tuberculosis has widened to include not only thorocoplastic operations but lobectomy. Carcinoma of the lung seems to be definitely on the increase and the inadequacy of radiation in the treatment of these cases is being more and more recognized. These patients are, therefore, coming earlier into the hands of competent chest surgeons and submitting to lobectomy or pneumonectomy with more hope of cure than ever before.

SURGERY OF THE HEART

The chief advance in this field during the past year has been the ever increasing success in occluding a patent ductus arteriosus in children, thus establishing normal function to many incapacitated youngsters and removing the danger of the development of bacterial endoarteritis. One or two cases have been reported of a cure

after the establishment of this unfortunate infection.

The use of heparin has had increasing favor in cases of coronary thrombosis and in conditions of venous thrombosis in which there is danger of propagation of the clot and subsequent arterial or venous embolism. With this material, the clotting time of the blood may be greatly prolonged. Unfortunately it has to be given more or less continuously in order to maintain its effect and has to be carried on until the clot, already formed, has become fixed where it is and organized. Heparin has also been suggested as a means to prevent peritoneal adhesions. (See "Medicine, Physiology, and Pathology," p. 797).

SURGERY OF THE INTESTINE

The safety of intestinal surgery has been greatly augmented during the year by the increased use of the Miller-Abbott tube and the sulfonamides. The thin rubber tube with an inflatable balloon on the end, which travels down the intestinal tract like a bolus of food, has taken most of the terrors out of intestinal obstruction for it goes down to the point of obturation, deflating the distended bowel as it does so. This may obviate an operation altogether or permit an emergency operation to become elective.

If there is to be a resection of the intestine for any cause, the Miller-Abbott tube may be passed down to just above the site and remain there as a safety valve, thus relieving the suture line of tension and danger of leakage, which might result in a peritoneal infection. Infection in these cases is also now being minimized by the use of the sulfonamide drugs mentioned below. This is of importance not only in the colon but in regions higher up, even as high as the duodenum, which is receiving increased interest because of the increasing number of resectable carcinomas found there.

SURGERY OF THE LIVER

In the past year there has been a significant advance in our knowledge

of the functions of the liver. Many tests have been devised to determine whether or not these functions have been disturbed. For a long time it was thought that the sole function of the liver was to secrete bile. Later it was recognized that it was a storehouse for glycogen and then that it took part in the carbohydrate metabolism along with the internal secretion of the pancreas. We now know that the liver is probably the site of serum albumin production. Depletion of protein from the diet causes a vacuolization of the liver cells and impaired function. The albumin globulin ratio of the plasma protein becomes reversed, and the patient becomes extremely ill. The liver also probably plays a part in the production of prothrombin so essential to the clotting of the blood. The numerous tests for liver function have had wider utilization during the past year. The hippuric acid test, the bromsulphonphthalein test, the serum bilirubin, the blood prothrombin, the blood cholesterol, and the cephalin flocculation tests have all been used and evaluated. Thorium dioxide has been recommended to determine the presence of an abscess in the liver—the normal organ giving a diffuse shadow and an abscess, if present, showing an area of diminished density or if multiple abscesses are present a diffused mottling. Other lesions might conceivably be confused with this.

SURGERY OF THE PANCREAS

The pancreas is continuing to receive surgical interest because of the increasing number of islet tumors with hyperinsulinism which are coming to light. It is also receiving special attention because of the demonstrated possibility of removing the head of the pancreas for a tumor arising either within it or in the contiguous duodenum or bile duct. Various methods have been devised for restoring the continuity of the intestine in such circumstances. The growing experience with islet tumors of the pancreas has revealed the fact that these growths may be found in

all parts of the gland including the head. At times when no mass can be found by carefully palpating the gland, small tumors have been found at second operations or at autopsy or in the portion of apparently normal gland removed for the purpose of reducing the total production of insulin.

BLOOD AND BLOOD SUBSTITUTES

The increasing knowledge of the behavior of the proteins of the blood has increased the necessity of furnishing these important elements when they have been depleted either by inadequate intake, by direct loss through hemorrhage, or by their diffusion out into the tissues either in shock, in burns, or in the presence of infections. At the same time, methods have been found to collect and preserve blood so that it may be deposited in a "bank" at some convenient time and drawn out on short notice at times of emergency. Blood banks have been established at most large hospitals and are being called on increasingly for the service which they can render. If the whole blood is not used inside of ten days, the plasma may be drawn off and stored for later use. The plasma or the serum may be dried and kept for a still longer time or the albumin may be separated from it and kept indefinitely. It has been found that the albumin is the all important element to keep the circulation in balance and the permeability of the capillaries normal, thus avoiding shock. It may be possible to substitute animal albumin for human albumin to perform this function. Research is being carried forward in this field with all possible speed in view of the present emergency.

SURGERY OF INFECTION

A new sulfonamide has been added to the list reported in 1940. That is sulfadiazine, which seems to have a wide range of bacteriostatic action and at the same time be very much less toxic than the other members of the sulfa family. It causes fewer re-

actions than sulfanilamide and is less nauseating than sulfapyridine and sulfathiazole. It may crystalize out in the kidneys and cause an anuria but is less likely to do this than either sulfapyridine or sulfathiazole because its conjugated form is more soluble in the urine than theirs. It apparently is just as effective as pyridine against the pneumococcus but may be less effective than sulfanilamide and less effective against the staphylococcus than sulfathiazole. It is more slowly absorbed and more slowly eliminated than the other drugs, so that it does not have to be given quite as often or in such large doses to maintain an adequate blood level. Greater experience must be obtained before its indications and limitations are completely understood. It is quite likely that other sulfa derivatives will be discovered which will be wider in their range of bactericidal activity than those yet found but it is certain that the ones already available will revolutionize the treatment of both medical and surgical infections.

It must be remembered, however, that these drugs will have their limitations in surgery for the very reason that surgical diseases are for the most part local with local injury to or destruction of tissue, and these drugs are all inhibited to some extent in their bacteriostatic action by the

presence of pus, or dead or damaged tissue.

WAR SURGERY

The advent of war has increased the importance of war casualties in the practice of surgeons, both military and civilian. A certain amount of news has come back from France and England but rigid censorship has limited this information considerably. The tremendous force of the aerial bombs has brought a new factor into play in trauma to the body—which is called "blast." Concussions on the heart and lungs as well as on the brain have had increasing importance and have increased the ratio of dead to injured among the air raid casualties. The general impression is that the incidence of infection in the war wounds has definitely decreased in England by the use of sulfanilamide administered both locally in the wounds and by mouth, but accurate statistics are not available. Similar reports in connection with our own casualties at Pearl Harbor in December have been made in *Science*, but the best method of using these drugs will have to await further experience after observation on a large number of carefully handled cases in which the bacteriology of the wounds has been carefully studied and a careful record has been kept on the degree of tissue damage and the adequacy of the surgery employed.

PUBLIC HEALTH AND HYGIENE

By IRA V. HISCOCK

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MILITARY AND CIVILIAN HEALTH PREPAREDNESS

The health of the nation assumes increased importance in times of war and preparation for war. In recognition of the need, efforts were made in 1941 by national, state, and local health agencies to extend and coordinate health activities for effective programs of military and civilian

health preparedness. Federal health legislation was extended, medical problems in the administration of the Selective Service Act received attention, and subcommittees were set up within the Health and Medical Committee of the Federal Security Agency to represent broad segments of professional and community interests—hospitals, medical education,

PUBLIC HEALTH AND HYGIENE

dentistry, industrial health and medicine, nursing, and Negro health. Special plans were carried out for meeting health and other problems incident to maneuvers. An office of Defence Health and Welfare Services was established under the Federal Security Administrator to serve as a center for the coordination of health and welfare services and to study, plan, and encourage measures designed to assure the provision of adequate services during the period of the emergency.

STATE HEALTH SERVICES

A comprehensive study by the U. S. Public Health Service of the distribution of health services in the structure of state government indicates that the past decade has shown marked growth and improvement in organization. There is a wide range in annual per capita expenditures by state governments for health activities. State and territorial services for the control of communicable disease are largely concentrated within the health departments. Minimum functions and organization principles for health activities, as redefined by the American Public Health Association, emphasize important administrative relationships between national, state, and local services, and include the following definition: "A health problem becomes one of public concern when, because of its nature and extent, its solution requires organized group action."

DECREASE IN MORTALITY

The provisional mortality rate of 11.1 per 1,000 population for the first half of the year 1941, from all causes, was slightly lower than the corresponding rate for the two previous years. Decreases were noted in mortality from pneumonia, from certain of the chronic diseases of late adult life, from diphtheria, scarlet fever, and diseases of the digestive system. But the current period was marked by widespread outbreaks of influenza

and measles, while an increase in the death rate from accidents was recorded.*

MILITARY HYGIENE AND SANITATION

There are special problems of public health concern related to military mobilization. The present war, directly affecting civilians as well as the armed forces, calls for preparedness and service on a broad scale. In addition to industrial and general civilian developments, new factors were involved in care of troops in training and in the field, of men on battleships and submarines, and of pilots, observers, and gunners in the air, besides the extraordinary hazard of infections when hundreds of thousands of men are closely crowded in barracks. Besides setting up mechanisms to meet these requirements, it became apparent that a medium was desirable for recording such procedures as might be adopted, the results of research projects, and information concerning problems of personnel. Hence, the Division of Medical Sciences of the National Research Council set up a Committee on Information, and subsequently this Committee also became the editorial staff of a new periodical, entitled *War Medicine*, published by the American Medical Association. This periodical contains original contributions, news and abstracts of articles of military, naval, and similar interest related to preparedness and war service.

* National Defense and the Public Health, Editorial, A. J. P. H., Vol. 31, No. 3, March, 1941; Public Health Expands its Facilities under Title VI, Federal Social Security Act, E. R. Coffey, A. J. Pitt, Vol. 31, No. 4, April, 1941; Minimum Functions and Organization Principles for Health Activities, *APHA Year Book*, 1940; Conference of State and Territorial Health Officers, P. H. Reports, U. S. P. H. S., June 6, 1941; Task of Public Health Workers in the National Emergency, W. P. Shepard, P. H. Reports, July 4; Distribution of Health Services in State Government, P. H. Reports, Aug. 22 and Nov. 21; Establishment of Office of Defense Health and Welfare Activities; P. H. Reports, Sept. 26; Provisional Mortality Rates, P. H. Reports, Oct. 10; and Health and Other Problems in the Army Maneuvers, Oct. 24, 1941.

XXIII. MEDICAL SCIENCES

VENEREAL DISEASES

With the rapid expansion of the armed forces and of industrial production, both civilian and military authorities were faced with serious threats to the health and morale of the personnel presented by the increasingly difficult problems of control of gonorrhea and syphilis. American history reveals that these diseases have always increased in times of mobilization.

The American Social Hygiene Association, in cooperation with the U.S. Public Health Service, helped to lay the foundation for cooperative effort to repress commercialized prostitution and, beginning early in the emergency, conducted studies of the problem in various sections of the country and aided in strengthening local and state legal-protective measures. The problems of the Army and Navy are intimately associated with those of the civilian population. In the spring of 1940 an agreement was prepared by the War and Navy Departments, and the Federal Security Agency, and adopted in May also by the Conference of State and Territorial Health Officers. This agreement recognized the services necessary for the control of venereal diseases in areas where armed forces or national defense employees are concentrated. The policies were implemented by directives of the War and Navy Departments and the Surgeons General of the services.

At the beginning of the current expansion it became apparent that special effort was necessary to improve health conditions in the vicinity of military establishments. On request of military authorities, the U.S. Public Health Service undertook this responsibility by the use of its own resources and by obtaining the co-operation of state and local civilian agencies in limited areas. A liaison officer of the Public Health Service was sent to each of the nine corps area headquarters and to the headquarters of the Puerto Rican Department to serve as an agent of the Public Health Service in carrying out the broad program of extra-

military sanitation, including venereal disease control.

In July, 1941, the President approved the May Act prohibiting prostitution "within such reasonable distance of military and naval stations as the Secretary of War or Navy may determine." Under this act the Secretary of War may establish areas within a reasonable distance of any military station in which it shall be a Federal offense to engage in or abet the practice of prostitution. The act requires that the Federal Security Administrator, along with the Secretaries of War and Navy, will take such steps as he deems necessary "to suppress and prevent the violation thereof."

The Federal Security Agency set up a Division of Social Protection as an integral part of Defense Health and Welfare Services. The program of the Division embraces four chief functions: repression of commercialized prostitution, treatment of prostitutes, protection of girls in defense areas, and cooperation with other agencies.

While recognizing the urgency of legal-protective measures, other important activities have been extended. These include educational and recreational activities, aid of early disinfection and other preventive measures, extension of services in relation to diagnosis and treatment and isolation procedures, and the promotion of industrial programs. Films, printed material, and exhibits have been prepared and widely utilized.*

* Relationship of the health of civilians to the efficiency of the Navy, With special reference to the venereal disease problem, C. S. Stephenson, *Am. J. P. H.*, Nov. 1940, P. 1921; *Plain Words about Venereal Diseases*, by Thomas Parran and R. A. Vonderlehr, Reynal and Hitchcock, New York, 1941, p. 207; Hearings before the Committee on Military Affairs, House of Representatives, 77th Congress, H. R. 2475; *Jour. Soc. Hyg.*, October, 1941, Social Hygiene and National Defense V; *Program of Division of Social Protection*, by Eliot Ness, V. D. Information, U. S. Public Health Service, December, 1941, p. 436; *Protecting Industry from Venereal Diseases*, *Jour. Soc. Hyg.*, March, 1941; see also 1941 issues of Venereal Disease Information, U. S. Public Health Service.

TETANUS TOXOID IMMUNIZATION

The possibilities of effective use of tetanus toxoid in the production of active immunity to tetanus has gone well beyond the research stage, although its general application is limited in the United States. While only 930 deaths were reported in a recent year, the amount of tetanus antitoxin used annually is evidence that there are hundreds of thousands of wounds where the possibility of tetanus must be considered. It has become recognized as a valuable procedure in the armed forces and established as "a reliable and safe method of producing lasting immunity against this infection. . . . Its universal adoption should soon lead to complete elimination of tetanus in civil, military and susceptible animal life." (Editorial, *A.J.P.H.*, Vol. 31, No. 7, July, 1941, p. 731; editorial, *War Medicine*, Vol. 1, No. 3, May, 1941, p. 426).

BUBONIC PLAGUE

Bubonic plague infection is reported in the wild rodents of ten western states, one of the important reservoirs of infection being ground squirrels. In 1941, infected rodents were found in one county in North Dakota and in another in Colorado, besides in California. A substantial reduction in the rodent population, sufficient to break the line of communication between infected and non-infected animals, is regarded as necessary. ("Plague Situation in the Western United States," by R. H. Creel, *A.J.P.H.* Vol. 31, No. 11, Nov. 1941, p. 1155).

MALARIA

Malaria is still widespread throughout the southern United States, where all three common species of human malaria plasmodia are established. It also has an extensive distribution in the Eastern, Central, and Western states, where *P. vivax* is the proper species. It is probably not endemic in Canada. Except for the Bahama Islands and Barbados, it is a serious menace throughout practically all of Mexico, the countries of Central

America and the West Indies. While malaria mortality in the United States, outside of the South, is relatively low, the morbidity may be appreciable. Studies have emphasized the fact that effective work against the anopheles mosquitoes requires an extensive knowledge of local vectors and that control measures must be adapted to the character of the local problem arising from the peculiarities of the various species. (*A Symposium on Human Malaria*, Amer. Assoc. for the Adv. of Science, Washington, D.C., 398 pp., 1941.)

POLIOMYELITIS

The virus of poliomyelitis (infantile paralysis) is a pathogenic agent whose identity is said to be determined in large part by the symptoms and pathology which it produces in man or in experimental animals and by its epidemiological and immunological characteristics. The virus is known to escape in considerable quantities from the upper respiratory and intestinal tracts of persons harboring it. No valuable specific diagnostic test has been evolved. So far as is known, all races of human beings are susceptible. There is a relation between the incidence of paralytic poliomyelitis and climate; as a rule the disease is more likely to be mild in tropical climates than in temperate zones. The disease is not limited to young people. At present, there is no safe, efficient vaccine for human use. Definite evidence is reported as lacking, but serotherapy administered to human beings, even in the preparalytic stage, is efficacious. Favorable progress has been made in treatment and rehabilitation. (*Infantile Paralysis*, a symposium delivered at Vanderbilt University, published by the National Foundation for Infantile Paralysis, Inc., New York, 1941).

INDUSTRIAL HYGIENE

Over 32 states and a few cities have industrial hygiene units in various stages of development, while the Division of Industrial Hygiene of the U. S. Public Health Service has con-

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ducted important studies and aided states and local areas in many ways. Among the new or increased activities were the training of industrial hygiene officers for work in the arsenals and navy yards and in other types of industry, the survey of commercial shipyards, airplane plants and various kinds of industrial establishments, the promotion of first-aid in the construction of plants, the conduct of toxicological research, and environmental sanitation outside of industrial plants. To supplement the work of the states, mobile units were provided by the U. S. Public Health Service. There are some 50,000,000 gainfully employed persons, exclusive of familial dependents, whose health status is not only dependent upon the protective and educative services normally established as a part of a whole-time community health service but who require particular attention because of their occupation and its relation to their health and welfare. Educational qualifications and plans for training of industrial hygiene personnel have been formulated. (*Transactions of the Fourth Annual Meeting of the Nat'l. Conf. of Governmental Industrial Hygienists*, U. S. Public Health Service, 205 pp., 1941; *Educational Qualifications of Industrial Hygienists*, *A.J.P.H.* Vol. 31, No. 7, July, 1941, p. 728.)

MENTAL HYGIENE

With the emergency there developed increased recognition of the need for a broadened program for civilian mental health. It was realized that psychiatry has a sufficient body of knowledge to detect incipient and frank mental disease, to apply national treatment to acute and chronic disorders and to their early manifestations. But the need was again stressed for application of psychiatric knowledge to help human beings to a better understanding of their own problems and the relation of their own behavior to that of other people. The complexity and magnitude of the task are suggested in considering the fact that there are some 750,000 patients with mental

and nervous diseases in American institutions whose care costs the United States some \$250,000,000.

The Veterans' Administration has hospitalized no less than 358,670 cases of mental and nervous disease since 1921. The readjustment of demobilized men to civilian life is one task, together with the assistance necessary for men rejected in the examination for Selective Service. Informed interest of the general practitioner, stimulated through graduate and undergraduate training in medical schools, more adequate professional staffs for the care of the mentally ill, more adequate provisions in mental institutions to relieve serious overcrowding, attention to legal provisions for admission to mental institutions, and extension of community mental hygiene units, are among the factors in a program outlined for civilian mental health founded upon a concept of early diagnosis and prompt treatment. (*A Program for Civilian Mental Health*, Watson B. Miller, P. H. Reports, Vol. 56, No. 29, July 18, 1941; see also current issues of *War Medicine*.)

NUTRITION

Nine hundred delegates from all parts of the country assembled in Washington in May to participate in the National Nutrition Conference for Defense, summoned by the President. Surveys indicated that, despite a so-called surplus of foods in this country, under-nourishment is widespread and is serious enough to be an affliction among that one-third of the population living along or below the subsistence level; many people with the means to eat well live on diets lacking in essential elements. Plans were formulated to put to work available scientific knowledge for the nutrition of the people, and recommendations to the President were followed by the development of a comprehensive program on a national basis. (*The National Conference*, P.H. Reports, Vol. 56, No. 24, June 13, 1941, p. 1233; *Hidden Hungers in a Land of Plenty*, *Handbook of Nutrition Projects*, Nat'l. Maternal and

Child Health Council, Washington. 1941).

Much attention has been given to medical evaluation of nutritional status, to ocular manifestations of Avitaminosis A, and to the isolation of the latest vitamin of the B-complex—the substance called biotin needed for yeast growth. Some of this work illustrates the principle that certain dietary deficiencies can result from the presence in the food of substances which prevent the absorption of dietary essentials; the diet itself may not be deficient in the usual sense. (Medical Evaluation of Nutritional Status, H. D. Kruse, *Milbank Memorial Fund Quarterly*, Vol. 19, No. 3, July, 1941, p. 207; Eakin, R. E. et als. *J. Biol. Chem.* 140, 535, Aug. 1941; DuVigneaud, V. et als. *J. Biol. Chem.* 140, 736, Sept. 1941; Appraisal of Nutritional Status, Symposium, *A.J.P.H.* Vol. 31, No. 10, Oct 1941, pp. 1061-1081; Nutrition in National Defense, Frank G. Boudreau. *A.J.P.H.* Vol. 31, No. 9, Sept. 1941.)

HOUSING

That public health is not merely an engineering science and a medical science but is also becoming a social science, is emphasized, for example, by developments in nutrition and in housing. Contributions to the subject of housing have been assembled, including basic principles of healthful housing, codes, surveys, and slum-clearance, particularly from the standpoint of the health officer; with problems of recreation and use of living space; with heating, lighting, and noise control, and new technical possibilities in housing construction; and with medical and social impacts of good and bad housing. (*Housing for Health*, papers presented under the auspices of the Committee on the Hygiene of Housing of the American Public Health Association, the Science Press, Lancaster, Pa., pp. 221, 1941; *Illness and Accidents among Persons Living under Different Housing Conditions*, R. H. Britten, P.H. Reports, Vol. 56, No. 13, March 28, 1941).

MEDICAL CARE

Prepayment plans for physicians' services have continued to arouse interest. New enabling acts were passed in Massachusetts and Ohio; new plans were put in operation in several states, among them, Minnesota, New Jersey, and New York. Instances of active operation of plans are the California Physicians' Service, the Health Service System of San Francisco, and the Michigan Medical Service. Experience recorded for the Agricultural Workers Health and Medical Association, in California and Arizona, with funds for administration and for the provision of medical care obtained by grants from the Federal Security Administration, indicates success in meeting the problems in these areas of medical care of low-income sources without disturbing the old "patient and physician relationship." Non-profit hospital service plans have continued to gain, with approximately 7,000,000 people enrolled in 1941. (Medical Care Experience in the Farm Security Administration in California, Karl L. Schaupp, *Proceedings, Nat'l. Conf. Soc. Work*, 1941, p. 494; Medical Care, *Quarterly Journal, Com. on Research in Medical Economics*, New York, 1941; Out-patient care for the Needy, *Hospitals*, Apr.-May, 1941; Maryland State Planning Commission Report, Baltimore, 1941; *Programs for Dental Health*, Amer. Dental Assoc. Chicago, 1941; *Prepayment Plans for Medical Care*, Franz Goldmann, Twentieth Century and Good Will Funds, New York, 1941; *Family Expenditures for Medical Care*, U.S. Dept. of Agriculture, Pub. No. 402, Washington, 1941.)

MATERNAL AND CHILD HEALTH

In the improvement of health services for mothers and children, trends are observed in the methods of administration, in the type and quality of service, and in the mortality rates. People are reported as developing greater confidence in the health services under the official agencies; better qualified personnel are being secured and state health agencies have

adopted the principles of merit systems of personnel administration. The policy of providing prenatal, postpartum, and child health medical services in a clinic or on a conference basis has been accepted in many areas. Twenty-six state health agencies are spending part of their maternal and child health funds for medical or hospital care of maternity patients and sick children. The development of public health nursing service for mothers and children is the largest item in all state maternal and child health programs. It is reported that 10,000 mothers and 28,000 children are living in the United States who would have died in the past four years if the maternal and infant mortality rates of as recent a year as 1935 had prevailed. (Maternal and Child Health Programs Under the Social Security Act, Edwin F. Daily, A. J., *P.H.*, Vol. 31, No. 2, Feb. 1941, p. 117).

HEALTH EDUCATION

If available scientific knowledge is to be more generally applied, health education is essential. "Health education is the sum of all experiences in school or elsewhere which favor-

ably influence the habits, attitudes, and knowledge relating to individual community, or racial health." The revised report from which this definition is taken states that the provision and direction of diversified experiences related to health education requires cooperative efforts of parents, teachers, and such health specialists as physicians, nurses, dentists, and public health officials. Several states and the Territory of Hawaii in 1941 issued publications dealing with school health policies which emphasized the importance in school health programs of measures for health protection, health guidance, and health education. (*Health Education, A Guide for Teachers*, Report of the Joint Committee on Health Problems in Education of the National Education Association and the American Medical Association, N.E.A., Washington, pp. 368, 1941; *Yesterday's School Children are Examined for the Army*, Editorial, *A.J.P.H.*, Vol. 31, No. 11, Nov. 1941, p. 1206; *Community Organization for Health Education*, A.P.H.A. Committee, The Technology Press, Cambridge, Mass., pp. 120, 1941; *Plague on Us*, Geddes Smith, Commonwealth Fund, N.Y., 365 pp. 1941).

VITAL STATISTICS

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STATISTICAL SCOPE

The United States Bureau of the Census compiles and prepares vital statistics for the entire country. For this purpose, transcripts of birth and death certificates are secured from each state by the Bureau. The data on these transcripts are coded, classified, and tabulated by age, sex, cause of death, geographical location, and numerous other categories. For the years 1939 and 1940, transcripts of the marriage and divorce certificates were also collected from many states, as well as statistical tabulations and lists of the patients in mental insti-

tutions, criminal and judicial statistics, and special data concerning hospitals. Details concerning these various subject matters are contained in a previous edition of *THE AMERICAN YEAR BOOK*.

The Division of Vital Statistics of the Bureau of the Census performs a variety of services in connection with the promotion of complete and uniform registration of births and deaths throughout the nation. Among these are: coordination of the vital statistics work of state, city, and county health departments; stimulation of uniform vital statistics legis-

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lation and standards; and promotion of registration completeness through field contacts, educational campaigns, and tests for completeness of registration. The Bureau of the Census cooperates with other Federal agencies making formal studies of special subjects, and with foreign countries in an attempt to secure greater international comparabilities of vital statistics.

PUBLICATIONS

Vital statistics information is made available in annual publications and in periodic releases. Special reports on the diverse subjects are also issued.

The annual volume of birth, stillbirth, infant mortality and mortality statistics for 1938 and 1939 have been completed and will appear in two parts: *Vital Statistics of the United States, Part I*, containing mortality and natality data by place of occurrence, and *Part II*, containing mortality and natality data by place of residence. Volumes 9 and 10 of the *Vital Statistics-Special Report Series*, the annual volumes on *Patients in Mental Institutions* and *Prisoners in State and Federal Prisons and Reformatories*, and the *Weekly Health Index*, *Weekly Accident Bulletin*, *The Registrar*, and the *Monthly Vital Statistics Bulletin* were all published during the year.

NATIONAL DEFENSE IN VITAL STATISTICS

The national emergency throughout the period of 1940 threw a constantly increasing load of work upon the vital statistics system of the country. This system, never strong enough in the terms of personnel, funds, or legal authority to meet fully its responsibilities, has been overwhelmed in all parts of the country by a flood of public demand for certified copies of birth certificates. This demand is due to the fact that national laws and agencies responsible for their enforcement require proof of the facts of birth and citizenship. Many adults do not have birth certificates on file in the state divisions of

vital statistics because the system of birth registration is relatively new in many parts of the country, dating back only 20 or 25 years in most of the states. As a result, approximately 60,000,000 people in the United States find themselves without properly recorded birth certificates. Since so many rights and privileges are dependent upon the proof of American birth, it was necessary to develop a uniform method by which such proof could be assembled, inspected, and made available for the use of those not having a birth certificate on file. During the last part of 1940 and the early part of 1941, such a standard uniform procedure was developed by the Census Bureau, with the assistance of state registrars of vital statistics and state health officers and with the cooperation of various government agencies. The importance of this phase of vital statistics work is steadily increasing.

ACCIDENT STATISTICS

In the last part of 1940 a new transcript form was developed for the procurement of facts concerning fatalities resulting from motor vehicular accidents. This procedure requires the state registrar to transcribe the facts on the death certificate, then to transmit the transcript to the state traffic authority. He in turn fills in certain information concerning the place and type of accident from his records. By this means a correlation of traffic and death information is secured which made possible in 1941 the tabulation of automobile fatalities by place and type of automobile accident. Most states have agreed to carry out this program.

MONOGRAPHS AND SPECIAL PROJECTS

Special monographs were undertaken by the Division of Vital Statistics as its special contribution to the decennial census program. These are: studies on cardiac disease; problems concerning residence allocation of births and deaths; birth and death rates for the period 1900 to 1940;

TABLE 1
TRENDS OF DEATH AND BIRTH RATES FOR THE REGISTRATION STATES
(Exclusive of stillbirths)

Calendar Year	Estimated Population of Continental United States	Death-Registration States in Continental United States				Birth-Registration States in Continental United States			
		Population		Deaths		Population		Births	
		Number	Per Cent of Total	Number	Rate Per 1,000 Population	Number	Per Cent of Total	Number	Rate Per 1,000 Population
1940	131,669,275	131,669,275	100.0	1,417,269	10.8	113,669,275	100.0	2,360,399	17.9
1939	130,879,718	130,879,718	100.0	1,387,897	10.6	130,879,718	100.0	2,265,588	17.3
1938	129,824,939	129,824,939	100.0	1,381,391	10.6	129,824,939	100.0	2,286,962	17.6
1937	128,824,829	128,824,829	100.0	1,450,427	11.3	128,824,829	100.0	2,203,337	17.1
1936	128,053,180	128,053,180	100.0	1,479,228	11.6	128,053,180	100.0	2,144,790	16.7
1935	127,250,232	127,250,232	100.0	1,392,752	10.9	127,250,232	100.0	2,155,105	16.9
1934	126,373,773	126,373,773	100.0	1,396,903	11.1	126,373,773	100.0	2,167,636	17.2
1933	125,578,763	125,578,763	100.0	1,342,106	10.7	125,578,763	100.0	2,081,232	16.6
1932	124,840,471	118,903,899	95.2	1,293,269	10.9	118,903,899	95.2	2,074,042	17.4
1931	124,039,648	118,148,987	95.3	1,307,273	11.1	117,455,229	94.7	2,112,760	18.0
1930	123,076,741	117,238,278	95.3	1,327,240	11.3	116,544,946	94.7	2,203,958	18.9
1929	121,769,939	115,317,450	94.7	1,369,757	11.9	115,317,450	94.7	2,169,920	18.8
1928	120,501,115	113,636,160	94.3	1,361,987	12.0	113,636,160	94.3	2,233,149	19.7
1927	119,038,062	107,084,532	90.0	1,211,627	11.3	104,320,830	87.6	2,137,836	20.5
1926	117,399,225	103,822,683	88.4	1,257,256	12.1	90,400,590	77.0	1,856,068	20.5
1925	115,831,963	102,031,555	88.1	1,191,809	11.7	88,294,564	76.2	1,878,880	21.3
1924	114,113,463	99,318,098	87.0	1,151,076	11.6	87,000,295	76.2	1,930,614	22.2
1923	111,949,945	96,788,197	86.5	1,174,065	12.1	81,072,123	72.4	1,792,646	22.1
1922	110,094,778	92,702,901	84.2	1,083,952	11.7	79,560,746	72.3	1,774,911	22.3
1921	108,541,489	87,814,447	80.9	1,009,673	11.5	70,807,090	65.2	1,714,261	24.2
1920	106,466,420	86,079,263	80.9	1,118,070	13.0	63,597,307	59.7	1,508,874	23.7
1919	104,512,110	83,157,982	79.6	1,072,263	12.9	61,212,076	58.6	1,373,438	22.4
1918	103,202,801	79,098,412	76.6	1,430,079	18.1	55,153,782	53.4	1,363,649	24.7
1917	103,265,913	70,234,775	68.0	981,239	14.0	53,197,952	53.5	1,353,792	24.5
1916	101,965,984	66,971,177	65.7	924,971	13.8	52,944,013	52.3	818,983	24.9
1915	100,549,013	64,894,847	61.6	815,500	13.2	31,096,697	30.9	776,304	25.0
1914	99,117,567	60,963,309	61.5	810,914	13.3				

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Calendar Year	Estimated Population of Continental United States	Death-Registration States in Continental United States				Birth-Registration States in Continental United States			
		Population		Deaths		Population		Births	
		Number	Per Cent of Total	Number	Rate Per 1,000 Population	Number	Per Cent of Total	Number	Rate Per 1,000 Population
1913	97,226,814	58,158,740	59.8	802,909	13.8				
1912	95,331,300	54,847,700	57.5	745,771	13.6				
1911	93,867,814	53,929,044	57.5	749,918	13.9				
1910	92,406,536	47,470,437	51.4	696,856	14.7				
1909	90,491,525	44,223,513	48.9	630,057	14.2				
1908	88,708,976	38,634,759	43.6	567,245	14.7				
1907	87,000,271	34,552,837	39.7	550,245	15.9				
1906	85,436,556	33,782,288	39.5	531,005	15.7				
1905	83,819,666	21,767,980	26.0	345,863	15.9				
1904	82,164,974	21,332,076	26.0	349,855	16.4				
1903	80,632,152	20,943,222	26.0	327,295	15.6				
1902	79,160,196	20,582,907	26.0	318,636	15.5				
1901	77,585,128	20,237,453	26.1	332,203	16.4				
1900	76,094,134	19,965,446	26.2	343,217	17.2				
Census Year									
1900	275,994,575	228,807,269	82.9	512,669	17.8				
1890	262,947,714	219,659,440	83.2	386,212	19.6				
1880	250,155,783	218,538,366	87.0	169,453	19.8				

¹ Enumerated population for census year ended April 1.

² Enumerated population for census year ended May 31.

Note.—Death rates for 1900-1939 and birth rates for 1915-1939 are based on revised intercensal population estimates as of July 1. They differ in some cases from rates previously published for these years. Death and birth rates for 1940 are based on the populations enumerated in the Federal census of April 1, 1940. For every year the District of Columbia is in both areas, but is not included in the "Number of States."

NATALITY AND MORTALITY DATA FOR EACH STATE, 1938-1940

(Exclusive of stillbirths)

Area	Total Births			Total Deaths			Rate per 1,000 Population					
	1940	1939	1938	1940	1939	1938	Births			Deaths		
							1940	1939	1938	1940	1939	1938
United States...	2,360,399	2,265,588	2,286,962	1,417,269	1,387,897	1,381,391	17.9	17.3	17.6	10.8	10.6	10.6
Alabama.....	62,925	61,385	62,032	29,531	28,301	29,536	22.2	21.7	22.0	10.4	10.0	10.5
Arizona.....	11,754	10,928	5,815	5,815	6,511	6,002	23.5	22.2	22.4	11.6	11.9	12.4
Arkansas.....	38,359	35,565	37,182	17,052	16,514	16,971	19.7	18.2	19.2	8.7	8.5	8.8
California.....	112,011	103,453	101,844	80,270	77,130	76,187	16.2	15.3	15.3	11.6	11.4	11.5
Colorado.....	21,154	20,692	20,599	12,430	12,558	12,615	18.8	18.6	18.8	11.1	11.3	11.5
Connecticut.....	25,195	23,463	23,783	17,886	17,696	17,582	14.7	13.9	14.2	10.5	10.5	10.5
Delaware.....	4,597	4,384	4,431	3,261	3,169	3,199	17.2	16.7	17.2	12.2	12.1	12.4
District of Columbia.	15,309	14,037	12,938	8,637	8,292	7,962	23.1	21.3	20.3	13.0	12.6	12.5
Florida.....	33,818	32,328	31,096	22,926	21,295	21,024	17.8	17.6	17.6	12.1	11.6	11.9
Georgia.....	64,998	64,781	64,636	32,513	31,843	33,783	20.8	20.7	20.7	10.4	10.2	10.8
Idaho.....	11,712	11,068	11,277	4,890	4,753	4,515	22.3	21.5	22.4	9.3	9.2	9.0
Illinois.....	123,198	117,841	122,562	88,231	86,994	84,769	15.6	15.0	15.6	11.2	11.0	10.8
Indiana.....	61,963	58,349	60,192	39,510	39,510	38,573	18.1	17.1	17.7	11.8	11.6	11.3
Iowa.....	45,464	43,765	43,221	26,376	26,465	25,623	17.9	17.4	17.4	10.4	10.5	10.3
Kansas.....	28,695	29,115	29,574	18,622	18,469	18,583	15.9	16.0	16.1	10.3	10.1	10.1
Kentucky.....	63,591	60,587	61,878	29,733	29,507	29,310	22.3	21.5	22.3	10.4	10.5	10.6
Louisiana.....	50,916	48,844	48,844	25,648	24,571	24,767	21.5	20.8	21.2	10.8	10.5	10.7
Maine.....	15,119	14,987	15,218	10,580	10,815	10,507	17.8	17.8	18.2	12.5	12.8	12.6
Maryland.....	30,251	28,291	29,013	22,107	20,831	20,847	16.6	15.8	16.4	12.1	11.6	11.8
Massachusetts.....	66,114	63,657	61,262	51,156	50,917	49,606	15.3	14.5	13.8	11.9	11.6	11.2
Michigan.....	99,108	94,418	96,963	52,108	52,019	50,687	18.9	18.3	19.2	9.9	10.1	10.0
Minnesota.....	53,083	50,237	50,062	26,814	26,754	26,179	19.0	18.2	18.3	9.6	9.7	9.6
Mississippi.....	52,575	51,721	53,694	23,154	22,646	22,800	24.1	23.8	25.0	10.6	10.4	10.6
Missouri.....	62,172	58,876	58,567	43,746	42,585	42,558	16.4	15.6	15.7	11.6	11.3	11.4
Montana.....	11,492	10,897	10,673	5,738	5,684	5,684	20.5	19.7	19.6	10.2	10.7	10.4
Nebraska.....	22,162	22,338	22,401	12,592	12,194	11,964	16.8	17.0	17.0	9.6	9.3	9.1
Nevada.....	2,061	1,940	1,888	1,252	1,263	1,272	18.7	18.0	17.9	12.7	11.7	12.1
New Hampshire.....	8,503	7,934	7,830	6,255	6,301	6,400	17.3	16.2	16.3	12.7	12.9	13.3

VITAL STATISTICS

Area	Total Births			Total Deaths			Rate per 1,000 Population					
	1940	1939	1938	1940	1939	1938	Births			Deaths		
							1940	1939	1938	1940	1939	1938
New Jersey.....	58,617	56,379	56,043	45,086	43,959	43,831	14.1	13.6	13.7	10.8	10.6	10.7
New Mexico.....	14,744	14,215	14,290	5,593	5,917	5,962	27.7	27.2	27.8	10.5	11.3	11.6
New York.....	196,888	187,575	189,559	149,946	149,501	147,106	14.6	13.9	14.1	11.1	11.1	10.9
North Carolina.....	80,882	79,149	79,934	32,081	31,793	33,599	22.6	22.4	23.0	9.0	9.0	9.7
North Dakota.....	13,356	13,158	13,041	5,235	5,424	5,208	20.8	20.5	20.4	8.2	8.5	8.1
Ohio.....	114,900	109,272	112,667	78,662	76,927	74,899	16.6	15.8	16.4	11.4	11.1	10.9
Oklahoma.....	44,574	43,471	44,188	20,461	20,391	19,957	19.1	18.6	19.0	8.8	8.7	8.6
Oregon.....	17,848	16,715	16,245	12,310	11,797	11,784	16.4	15.5	15.3	11.3	10.9	11.1
Pennsylvania.....	165,680	161,049	165,984	111,498	108,007	107,282	16.7	16.4	16.8	11.3	11.0	10.8
Rhode Island.....	10,805	10,444	10,336	7,984	7,775	8,276	15.1	14.9	15.2	11.2	11.1	11.9
South Carolina.....	44,380	42,811	41,120	20,186	19,296	20,718	23.4	22.6	22.0	10.6	10.2	11.1
South Dakota.....	11,619	11,616	11,826	5,454	5,517	5,482	18.1	18.0	18.2	8.5	8.6	8.4
Tennessee.....	55,815	53,353	53,651	29,904	28,722	29,288	19.1	18.6	19.0	10.3	10.0	10.4
Texas.....	126,687	121,049	121,156	62,503	60,218	60,208	19.7	19.1	19.3	9.7	9.5	9.6
Utah.....	13,559	13,007	13,214	4,925	4,712	4,853	24.6	24.0	24.8	8.9	8.7	9.1
Vermont.....	6,694	6,375	6,301	4,610	4,544	4,591	18.6	17.8	17.7	12.8	12.7	12.9
Virginia.....	55,208	52,921	53,495	29,579	28,635	29,579	20.6	19.6	19.9	11.0	10.6	11.0
Washington.....	28,141	26,538	26,767	20,009	18,516	18,528	16.2	15.6	15.9	11.5	10.9	11.0
West Virginia.....	42,103	41,545	42,434	17,626	17,490	17,766	22.1	22.0	22.7	9.3	9.3	9.5
Wisconsin.....	54,848	54,168	55,004	31,614	31,424	30,704	17.5	17.4	17.8	10.1	10.1	10.0
Wyoming.....	5,052	4,897	4,946	2,136	2,207	2,235	20.1	19.8	20.2	8.5	8.9	9.1

Note.—Birth and death rates for 1938 and 1939 are based on population estimates as of July 1, using the final population figures from the 1940 Federal census. They differ in some cases from rates previously published for these years. Birth and death rates for 1940 are based on the enumerated (April 1) populations from the 1940 Federal census.

NUMBER OF BIRTHS, DEATHS, AND INFANT DEATHS BY RACE, AND RATES, FOR EACH STATE:
UNITED STATES, 1940

Area	Population	Births			Deaths			Infant Mortality			
		Total	Rate Per 1,000 Enu-merated Popu-lation	White	Other Races	Total	Rate Per 1,000 Enu-merated Popu-lation	White	Other Races	Number	Rate Per 1,000 Live Births
United States	131,669,275	2,360,399	17.9	2,067,953	292,446	1,417,269	10.8	1,231,225	186,046	110,984	47.0
Alabama	2,832,961	62,925	22.2	38,889	24,036	29,531	10.4	15,755	13,776	3,864	61.4
Arizona	499,261	11,754	23.5	10,135	1,619	5,815	11.6	4,751	1,064	991	84.3
Arkansas	1,949,387	38,359	19.7	29,147	9,212	17,052	8.7	11,800	5,252	1,752	45.7
California	6,907,387	112,011	16.2	107,084	4,927	80,270	11.6	76,726	3,544	4,411	39.4
Colorado	1,123,296	21,154	18.8	20,847	307	12,430	11.1	12,153	277	1,266	59.8
Connecticut	1,709,242	25,195	14.7	24,557	638	17,886	10.5	17,438	448	858	34.1
Delaware	266,505	4,597	17.2	3,852	745	3,261	12.2	2,605	656	225	48.9
District of Columbia	663,091	15,309	23.1	10,679	4,630	8,637	13.0	5,678	2,959	719	47.0
Florida	1,897,414	33,818	17.8	23,858	9,960	22,926	12.1	15,245	7,681	1,814	53.6
Georgia	3,123,723	64,998	20.8	39,305	25,693	32,513	10.4	17,530	14,983	3,761	57.9
Idaho	524,873	11,712	22.3	11,617	95	4,890	9.3	4,795	95	495	42.3
Illinois	7,897,241	123,198	15.6	116,357	6,841	88,231	11.2	82,051	6,180	4,343	35.3
Indiana	3,427,796	61,963	18.1	59,766	2,197	40,402	11.8	38,463	1,939	2,596	41.9
Iowa	2,538,268	45,464	17.9	45,226	238	26,376	10.4	26,085	291	1,670	36.7
Kansas	1,801,028	28,695	15.9	27,646	1,049	18,622	10.3	17,558	1,064	1,093	38.1
Kentucky	2,845,627	63,591	22.3	60,396	3,195	29,733	10.4	25,904	3,829	3,358	52.8
Louisiana	2,363,880	50,916	21.5	29,853	21,063	25,648	10.8	13,875	11,773	3,271	64.2
Maine	847,226	15,119	17.8	15,074	45	10,580	12.5	10,555	25	809	53.5
Maryland	1,821,244	30,251	16.6	23,664	6,587	22,107	12.1	17,111	4,996	1,499	49.6
Massachusetts	4,316,721	66,114	15.3	65,103	1,011	51,156	11.9	50,301	855	2,478	37.5
Michigan	5,256,106	99,108	18.9	94,985	4,123	52,108	9.9	49,372	2,736	4,033	40.7
Minnesota	2,792,300	53,083	19.0	52,392	691	26,814	9.6	26,458	356	1,769	33.3
Mississippi	2,183,796	52,575	24.1	23,135	29,440	23,154	10.6	9,600	13,554	2,854	54.3
Missouri	3,784,664	62,172	16.4	57,972	4,200	43,746	11.6	39,554	4,192	2,913	46.9
Montana	559,456	11,492	20.5	10,820	672	5,728	10.2	5,415	313	531	46.2
Nebraska	1,315,834	22,162	16.8	21,833	329	12,592	9.6	12,335	257	792	35.7
Nevada	110,247	2,061	18.7	1,862	199	1,404	12.7	1,253	151	107	51.9
New Hampshire	491,524	8,503	17.3	8,495	8	6,255	12.7	6,243	12	340	40.0

VITAL STATISTICS

Area	Population	Births			Deaths			Infant Mortality			
		Total	Rate Per 1,000 Enumerated Population	White	Other Races	Total	Rate Per 1,000 Enumerated Population	White	Other Races	Number Live Births	Rate Per 1,000 Live Births
New Jersey.....	4,160,165	58,617	14.1	54,100	4,607	45,086	10.8	41,703	3,383	2,086	35.6
New Mexico.....	531,818	14,744	27.7	14,313	431	5,593	10.5	5,282	311	1,468	99.6
New York.....	13,479,142	196,888	14.6	186,682	10,206	149,946	11.1	142,372	7,574	7,322	37.2
North Carolina.....	3,571,623	80,582	22.6	54,676	26,906	32,081	9.0	20,362	11,719	4,629	57.4
North Dakota.....	641,935	13,356	20.8	12,929	427	5,235	8.2	5,069	166	603	45.1
Ohio.....	6,907,612	114,900	16.6	108,780	6,120	78,662	11.4	73,533	5,129	4,759	41.4
Oklahoma.....	2,336,434	44,574	19.1	40,018	4,556	20,461	8.8	17,542	2,919	2,214	49.7
Oregon.....	1,089,684	17,848	16.4	17,549	299	12,310	11.3	12,068	242	588	32.9
Pennsylvania.....	9,900,180	165,680	16.7	156,241	9,439	111,498	11.3	104,361	7,137	7,400	44.7
Rhode Island.....	713,346	10,805	15.1	10,559	246	7,984	11.2	7,783	1,201	413	38.2
South Carolina.....	1,899,804	44,380	23.4	22,381	21,999	20,186	10.6	9,048	11,138	3,024	68.1
South Dakota.....	642,961	11,619	18.1	10,918	701	5,454	8.5	5,086	368	456	39.2
Tennessee.....	2,915,841	55,815	19.1	47,290	8,525	29,904	10.3	22,118	7,786	3,052	54.7
Texas.....	6,414,824	126,687	19.7	110,885	15,802	62,503	9.7	50,902	11,601	8,685	68.6
Utah.....	550,310	13,559	24.6	13,412	147	4,925	8.9	4,841	84	551	40.6
Vermont.....	359,231	6,694	18.6	6,690	4	4,610	12.8	4,605	5	301	59.3
Virginia.....	2,677,773	55,208	20.6	39,653	15,555	29,579	11.0	19,325	10,254	3,272	45.0
Washington.....	1,736,191	28,141	16.2	27,400	741	20,009	11.5	19,370	639	1,005	35.7
West Virginia.....	1,901,974	42,103	22.1	39,903	2,200	17,626	9.3	15,968	1,658	2,269	53.9
Wisconsin.....	3,137,587	54,848	17.5	54,185	663	31,614	10.1	31,222	392	2,041	37.2
Wyoming.....	250,742	5,052	20.1	4,930	122	2,136	8.5	2,054	82	234	46.3

XXIII. MEDICAL SCIENCES

DEATH RATE PER 100,000 ESTIMATED POPULATION FOR PRINCIPAL CAUSES IN THE REGISTRATION STATES OF CONTINENTAL UNITED STATES

Cause of Death	1900	1910	1920	1930	1938	1939	1940*
All causes.....	1,719.1	1,468.0	1,298.9	1,132.1	1,064.0	1,060.4	1,076.4
Typhoid and paratyphoid fever...	31.3	22.5	7.6	4.8	1.9	1.5	1.1
Cerebrospinal (meningococcus) meningitis.....	(1)	0.3	1.6	3.6	0.8	0.7	0.5
Scarlet fever.....	9.6	11.4	4.6	1.9	0.9	0.7	0.5
Whooping cough.....	12.2	11.6	12.5	4.8	3.7	2.3	2.2
Diphtheria.....	40.3	21.1	15.3	4.9	2.0	1.5	1.1
Tuberculosis (all forms).....	194.4	153.8	113.1	71.1	49.1	47.1	45.9
Tuberculosis of respiratory system.....	174.5	133.3	99.8	63.0	44.7	43.1	42.2
Tuberculosis (other forms).....	19.9	20.6	13.4	8.1	4.4	4.0	3.7
Malaria.....	6.2	1.1	3.4	2.9	1.8	1.3	1.1
Syphilis (all forms) ¹	12.0	13.5	16.5	15.7	15.9	15.0	14.4
Measles.....	13.3	12.4	8.8	3.2	2.5	0.9	0.5
Cancer and other malignant tumors	64.0	76.2	83.4	97.4	114.9	117.5	120.3
Diabetes mellitus.....	11.0	15.3	16.1	19.1	23.9	25.5	26.6
Intracranial lesions of vascular origin ²	106.9	95.8	93.0	89.0	85.9	87.8	90.9
Diseases of the heart ¹	137.4	158.9	159.6	214.2	269.7	⁵ 275.5	⁵ 292.5
Bronchitis ³	45.2	23.9	13.2	4.2	2.8	2.9	3.0
Pneumonia (all forms) and influenza.....	202.2	155.9	207.3	102.5	80.4	75.7	70.3
Bronchopneumonia ⁷	22.8	46.0	54.6	34.3	30.5	27.1	26.2
Lobar pneumonia.....	152.6	44.8	72.9	45.3	34.3	29.3	25.2
Pneumonia (unspecified).....	(1)	50.9	9.3	3.5	3.0	2.9	3.5
Influenza.....	26.7	14.2	70.5	19.4	12.7	16.4	15.3
Diarrhea and enteritis, and ulceration of the intestine ⁸	142.7	115.4	53.7	26.0	14.3	11.6	10.3
Appendicitis.....	8.8	10.8	13.2	15.2	11.0	10.8	9.9
Hernia and intestinal obstruction ⁹	11.9	12.1	10.5	10.2	9.7	9.4	9.0
Cirrhosis of the liver.....	12.5	13.3	7.1	7.2	8.3	8.3	8.6
Nephritis (all forms).....	88.6	94.8	88.8	91.0	77.4	⁵ 82.9	⁵ 81.5
Diseases of pregnancy, childbirth, and puerperium.....	13.4	15.3	19.0	12.7	7.7	¹⁰ 7.0	¹⁰ 6.7
Puerperal septicemia.....	5.8	7.0	6.5	4.6	2.6	¹⁰ 2.9	¹⁰ 2.8
Puerperal toxemias.....	2.2	3.3	4.8	3.5	1.9	1.7	1.7
Other puerperal causes.....	5.4	5.1	7.7	4.6	3.2	2.4	2.3
Congenital malformations and diseases peculiar to early infancy.....	74.6	88.2	84.4	60.8	48.7	48.4	49.2
Suicide.....	10.2	15.3	10.2	15.6	15.3	14.1	14.4
Homicide.....	1.2	4.6	6.8	8.8	6.8	6.4	6.2
Motor-vehicle accidents ¹¹	(1)	1.8	10.3	26.7	25.1	24.7	26.2
Other accidents ¹²	72.3	82.7	60.7	53.8	47.2	46.0	47.4
Unknown and ill-defined diseases..	67.4	22.0	17.5	20.5	15.1	15.1	16.0

* Rates for 1940 based on enumerated population.

¹ Not separately tabulated.² Not comparable from 1900-1920.³ Includes pulmonary embolism and thrombosis from 1900-1920.⁴ Excludes diseases of coronary arteries.⁵ Not strictly comparable with prior years because of shift to nephritis of certain inclusions under diseases of the heart.⁶ Includes capillary bronchitis from 1900-1920.⁷ Includes capillary bronchitis from 1930.⁸ Includes ulcer of the duodenum from 1900-1920.⁹ Excludes adhesions of the intestines from 1900-1920.¹⁰ Includes phlegmasia alba dolens, etc., and criminal abortion.¹¹ Automobile accidents only for 1910 and 1920.¹² Includes legal executions from 1900-1920.

comparability of mortality statistics; as a part of the Vital Statistics-Special Reports Series.

MARRIAGE AND
DIVORCE STATISTICS

Publication plans were developed for marriage and divorce statistics

BIRTH REGISTRATION
TEST PROJECT

The birth registration test project was carried a long way toward completion in 1940. As a part of the

PERIODICAL PUBLICATIONS

1940 decennial census an infant card was collected by the census enumerator for each child under four months of age at the time of the census enumeration, April 1, 1940. These infant cards were matched with the birth certificates filed in state vital statistics offices for the same period. Through this matching and follow-up field work in the states, it will be possible to secure a nationwide consistent test of birth registration, which will have been made for every city, county, and state of the country.

INTER-AMERICAN STATISTICAL ACTIVITIES

In 1940 a technical expert in the Division of Vital Statistics was sent to Uruguay for a period of eight months, in order to recommend, at Uruguay's request, improvements in the vital statistics system of that country. The results of this activity have been so helpful to the nation

concerned that requests have arisen from other nations of South America to obtain services of like nature.

UNITED STATES SUMMARY OF VITAL STATISTICS IN 1940

There was an increase of 94,811 births and 29,372 deaths in 1940 for the vital statistics as a whole, as compared with the corresponding figures for the preceding year. The birth rate increased 17.9 per 1,000 population in 1940 and gives indications that it will likely go higher for 1942.

The maternal death rate and infant mortality rate continued to decrease substantially. Increases in the death rates for diseases of the heart, cancer, intracranial lesions of vascular origin, and accidental causes of death, and decreases in the death rates for influenza, pneumonia, tuberculosis, and diarrhea and enteritis, were the outstanding features worthy of special note.

PERIODICAL PUBLICATIONS

American Druggist

572 Madison Ave., New York City.

American Journal of Anatomy

36th Street and Woodland Aves., Philadelphia.

American Journal of Cancer

654 Madison Ave., New York City.

American Journal of Clinical Pathology

Mount Royal and Guilford Aves., Baltimore, Md.

American Journal of the Medical Sciences

600 Washington Sq., Philadelphia.

American Journal of Nursing

1790 Broadway, New York City.

American Journal of Obstetrics and Gynecology

3523 Pine Boulevard, St. Louis, Mo.

American Journal of Pathology

818 Harrison Ave., Boston.

American Journal of Pharmacy

Philadelphia College of Pharmacy and Science, Philadelphia.

American Journal of Public Health and the Nation's Health

1790 Broadway, New York City.

American Journal of Surgery

49 West 45th Street, New York City.

Anatomical Record

36th Street and Woodland Ave., Philadelphia.

Annals of Medical History

49 East 33rd Street, New York City.

Annals of Surgery

227 South Sixth Street, Philadelphia.

Journal of the American College of Dentists

632 West 168th Street, New York City.

Journal of the American Dental Association

212 East Superior Street, Chicago.

Journal of the American Institute of Homeopathy

280 Madison Ave., New York City.

XXIII. MEDICAL SCIENCES

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| <p><i>Journal of the American Medical Association</i>
535 North Dearborn Street, Chicago.</p> <p><i>Journal of the American Pharmaceutical Association</i>
2215 Constitution Ave., Washington, D.C.</p> <p><i>Journal of Bacteriology</i>
Mount Royal and Guilford Aves., Baltimore, Md.</p> <p><i>Journal of Bone and Joint Surgery</i>
8 The Fenway, Boston.</p> <p><i>Journal of Clinical Investigation</i>
654 Madison Ave., New York City.</p> <p><i>Journal of Dental Research</i>
632 West 168th Street, New York City.</p> <p><i>Journal of Experimental Medicine</i>
York Ave. and 66th Street, New York City.</p> <p><i>Journal of Infectious Diseases</i>
629 South Wood Street, Chicago.</p> <p><i>Journal of Nervous and Mental Disease</i>
64 West 56th Street, New York City.</p> | <p><i>Journal of Pharmacology and Experimental Therapeutics</i>
Mount Royal and Guilford Aves., Baltimore, Md.</p> <p><i>Journal of Social Hygiene</i>
1790 Broadway, New York City.</p> <p><i>Medical Life</i>
4 St. Luke's Place, New York City.</p> <p><i>Medical Record</i>
20 Vesey Street, New York City.</p> <p><i>Medical Review of Reviews</i>
4 St. Luke's Place, New York City.</p> <p><i>Medicine</i>
Mount Royal and Guilford Aves., Baltimore, Md.</p> <p><i>N. Y. State Journal of Medicine</i>
292 Madison Ave., New York City.</p> <p><i>Radiology</i>
607 Medical Arts Building, Syracuse, N.Y.</p> <p><i>Surgery, Gynecology and Obstetrics</i>
54 East Erie Street, Chicago.</p> <p><i>Yale Journal of Biology and Medicine</i>
New Haven, Conn.</p> |
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COGNATE SOCIETIES AND RESEARCH INSTITUTIONS

(For further information, the reader may address the following organizations)

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| <p>ACADEMY OF MEDICINE, 2 E. 103rd St., New York City.</p> <p>ALLIANCE AGAINST FRAUDS, 36 W. 44th St., New York City.</p> <p>ALLIED DENTAL COUNCIL, 145 W. 57th St., New York City.</p> <p>AMERICAN ACADEMY OF APPLIED DENTAL SCIENCE, 587 Fifth Ave., New York City.</p> <p>AMERICAN COLLEGE OF SURGEONS, 40 E. Erie St., Chicago, Ill.</p> <p>AMERICAN GYNECOLOGICAL SOCIETY, 1220 Park Ave., New York City.</p> <p>AMERICAN HEART ASSN., INC., 50 W. 50th St., New York City.</p> <p>AMERICAN INSTITUTE OF HOMEOPATHY, 280 Madison Ave., New York City.</p> <p>AMERICAN LARYNGOLOGICAL, RHINOLOGICAL AND OTOLOGICAL SOCIETY, INC., 708 Medical Arts Bldg., Rochester, N.Y.</p> | <p>AMERICAN MEDICAL ASSN., 535 N. Dearborn St., Chicago, Ill.</p> <p>AMERICAN OPHTHALMOLOGICAL SOCIETY, 255 S. 17th St., Philadelphia, Pa.</p> <p>AMERICAN OSTEOPATHIC ASSN., 540 N. Michigan Ave., Chicago, Ill.</p> <p>AMERICAN PHYSIOLOGICAL SOCIETY, 303 E. Chicago Ave., Chicago, Ill.</p> <p>AMERICAN SOCIETY OF CLINICAL PATHOLOGISTS, 531 N. Main St., South Bend, Ind.</p> <p>AMERICAN SOCIETY FOR THE CONTROL OF CANCER, 1250 Sixth Ave., New York City.</p> <p>AMERICAN SOCIETY OF TROPICAL MEDICINE, Ohio State University College of Medicine, Columbus, Ohio.</p> <p>AMERICAN VETERINARY MEDICAL ASSN., 221 N. La Salle St., Chicago, Ill.</p> |
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COGNATE SOCIETIES AND RESEARCH INSTITUTIONS

ASSOCIATION OF AMERICAN MEDICAL COLLEGES, 5 S. Wabash Ave., Chicago, Ill.

ASSOCIATION OF MILITARY SURGEONS OF THE U.S., Army Medical Museum, Washington, D.C.

EDWARD L. TRUDEAU FOUNDATION FOR RESEARCH AND TEACHING IN TUBERCULOSIS, Saranac Lake, N. Y.

NATIONAL LEAGUE OF NURSING EDUCATION, 50 W. 50th St., New York City.

NATIONAL TUBERCULOSIS ASSN., 50 W. 50th St., New York City.

NEW YORK ACADEMY OF SCIENCES, 77th St. and Central Park West, New York City.

NEW YORK HEALTH DEPARTMENT, INC., 125 Worth St., New York City.

OSTEOPATHIC AID ASSN., 60 East 42nd St., New York City.

PUBLIC HEALTH COMMITTEE, 2 E. 103rd St., New York City.

ROCKEFELLER FOUNDATION, 49 W. 49th St., New York City.

SOCIETY OF AMERICAN BACTERIOLOGISTS, Agricultural Hall, University of Wisconsin, Madison, Wis.

SOCIETY OF MEDICAL JURISPRUDENCE, 477 First Ave., New York City.

SOUTHERN MEDICAL ASSN., 1928 First Ave., Birmingham, Ala.

UNITED HOSPITAL FUND, 370 Lexington Ave., New York City.

DIVISION XXIV

PHILOSOPHICAL AND SOCIAL SCIENCES

PSYCHOLOGY

BY WILBUR S. HULIN
PROFESSOR, UNIVERSITY OF OREGON EXTENSION

WAR

Defense.—A series of pertinent articles on Psychological Service in National Defense appears in the September-October issue of the *J. Consult. Psych.* in which the following topics are considered: comparison of "man-power and military effectiveness," by R. M. Yerkes, shows the set-up arranged for assigning men to the tasks for which they are most suitable; summary of the actual jobs which psychologists are doing in military research is made by K. M. Dallenbach and W. R. Miles; W. V. Bingham describes the tests used by the Army, and C. M. Louttit describes those used by the Navy; aircraft pilots are carefully selected by tests described by J. G. Jenkins; G. W. Allport outlines the important task of applying psychological service to civilian morale.

National Roster.—Concerning the psychological aspects of the National Roster of Scientific and Specialized Personnel, L. Carmichael lists the 82 fields in which psychologists may serve; many members are on selective service boards (*ibid.*, Dec.).

Military Psychology.—C. C. Pratt has edited an extensive monograph on Military Psychology (*Psych. Bull.*, June) in which many contributors discuss "motor transportation personnel" and the standardized driver-training required in the *Army Field Manual*; "aviation" from a survey of 92 studies upon the sensori-motor tests, emotional stability tests, and

the physical adjustments required during flight; "classification" of men for military tasks and ranks in the armies of all the principal nations is reviewed; the effects of stimulants, drugs and also gases is reported, as is also the knowledge regarding "fatigue," reviews of "morale" and "motivation" are furnished along with more general discussions of "perception," "propaganda," "neurosis," and "rehabilitation." An interesting document of the Committee for National Morale is the survey of literature published on German Psychological Warfare in which more than 500 articles are cited; K. Young evaluates the literature in terms of its significance for America. At the American Psychiatric Association annual meetings a symposium on "the psychiatrist and the national emergency" was presented. A. Kardiner offers *The Traumatic Neuroses of War* (Hoeber).

AMERICAN PSYCHOLOGICAL ASSOCIATION

At the annual A.P.A. meetings, Northwestern University, Sept. 3-5, the presidential address was given by H. Woodrow on the Problem of General Quantitative Laws in Psychology (*Psych. Bull.*, Jan. '42). The A.P.A. includes more than 2,700 members and associate members whose publications in 1941 were distributed, according to W. S. Hunter (*Amer. J. Psych.*, Oct.), as follows: leaning and intelligence 16%, social processes

12%, general and statistics 10%, education and vocational psychology 9%, sensation 9%, emotion and glands 8%, etc.

TEXTS AND OTHER PUBLICATIONS

The best seller of texts, F. L. Ruch's *Psychology and Life* (Scott, Foresman), has been revised and enlarged; new chapters on the nervous system have been added. There are revisions of H. E. Garrett's *Great Experiments in Psychology* (Appleton-Century) and W. L. Valentine's *Experimental Foundations of General Psychology* (Farrar & Rinehart). A comprehensive text on *Psychology* (Farrar & Rinehart) has come from J. J. B. Morgan. A first course, by C. J. Marsh, called *You and Psychology* (Burgess), has appeared. R. B. Cattell's *General Psychology* (Sci-Art) is largely devoted to applied problems.

"During the last decade psychologists have become increasingly aware of the methodological problems of their science," say G. Bergmann and K. W. Spence who picture the rise of operationism and indicate the necessary convergence of current viewpoints (*Psych. Rev.*, Jan.). A philosopher's "symposium on recent advances in psychology" includes many articles (Amer. Philos. Soc.); see also the *Dictionary of Philosophy* (Philos. Lib.) which is about one-fourth psychology.

J. G. Needham has prepared a readable book on the best biological and sociological traditions of the science which answers the desire of many readers for an understandable scientific approach: *About Ourselves* (Jacques Cattell). H. A. Overstreet has applied his concept of mental efficiency to the field of democracy in *Our Free Minds* (Norton).

NATURE OF INSANITY

H. Babcock makes a new approach to the distinction between normal and pathological mental states in his book, *Time and Mind* (Sci-Art), in which "personal tempo" is regarded as a fundamental criterion. M. Sher-

man presents *Basic Problems of Behavior* (Longmans, Green). Mental "dynamics" are stressed in A. H. Maslow and B. Mittelman's *Principles of Abnormal Psychology* (Harper). N. D. C. Lewis offers *A Short History of Psychiatric Achievement* (Norton).

SCHIZOPHRENIA

Schizophrenia in Childhood (Macmillan) by C. Bradley announces that this mental state is found in children, in addition to the usually accepted occurrence in adults. In an analysis of 100 cases of schizophrenia which have recovered, T. A. C. Rennie concludes that women recover more often, patients in the 20's and those with hereditary predisposition (*Arch. Neurol. & Psychiat.*, Aug.).

HYPNOSIS

M. H. Erickson reviews post-hypnotic suggestion and points out the presence of spontaneous self-limited trances which are a dissociation phenomenon (*J. Gen. Psych.*, Jan.). Hypnosis is successfully used by F. G. Livingood for treating college student problems (*J. Psych.*, Dec.). W. R. Wells can induce hypnotic crimes, such as pocket-picking, and says that the failure reported in early literature was due to faulty methods (*ibid.*, Jan.). P. C. Young reviews the entire field (*Psych. Bull.*, Feb.).

BLINDNESS

S. P. Hayes brings up to date the educational and research work done for the blind: *Contributions to a Psychology of Blindness* (Amer. Found. for the Blind). The facial expressions of emotion in blind children gradually decrease as they grow older; smiling and laughing are not socially regulated as in seeing children; crying is not different in the two groups: J. Thompson (*Arch. Psych.*, July).

FRUSTRATION

In an ingenious study of frustration in dogs and sheep, Q. F. Curtis showed that the animals which have an early life of security and tranquility are more resistant to the strains

of conflicting experience (such as rival animals, confinement, and punishment) than animals which have always lived in insecurity (*Psych. Bull.*, July). Frustrated children exhibit several significant physiological changes, as tested by H. Jost, of skin galvanic resistance, tremor, breathing and pulse, especially in neurotics (*Child Dev.*, Mar.). A topological experiment on *Frustration and Aggression* (Univ. Ia. Child Welf.) is given by R. Barker, T. Dembo, and K. Lewin. R. M. Page examined all records of the Chicago Bureau of Child Study and concluded that aggression is not primarily a result of frustration but is due to specifically learned reactions in the home; also, withdrawal-behavior is apt to be based upon actual deficiency in ability rather than frustration (*Psych. Bull.*, July).

PERSONALITY

Personal Adjustment.—In the *Psychology of Personal Adjustment* (Wiley) F. M. McKinney offers a text based on the customs of present-day college life. *Personal Problems of Everyday Life* (Appleton-Century) by D. W. Baruch and L. E. Travis is a somewhat candid description of adult mental hygiene especially in family life. H. Cleckley's *The Mask of Sanity* (Mosby) studies the eccentricities in which moral and cultural values have lost their meaning in a "semantic dementia." L. P. Thorpe has a new book, *Personality and Life* (Longmans, Green).

Analysis.—R. W. Wieman stressed the importance of the "value" concept in formulating definitions of personality; especially values based on "human strivings" (*Psych. Bull.*, July). A suggestive classification of "real, pseudo, and sham qualities of personality," offered by G. Ichheiser, includes factors evolved in the minds of other persons, borrowed qualities in addition to the real qualities independent of any particular situation (*Char. & Pers.*, Mar.). D. M. Brown believes the consistency in interest and performance in various mental

tests reveals a constant quality of personality (*Arch. Psych.*, July).

Teacher Personality.—P. M. Symonds proposes that education invest in training the personality of the teachers; this can be accomplished partly by using H. A. Murray's techniques (*A. J. Orthopsychiat.*, Jan.). J. S. Plant similarly believes that properly selected teachers can endow pupils with richer internal resources; there is a national characteristic today of escaping reality (*Educ. Rec.* Apr.).

SOCIAL

Happenings.—In his book on *The Psychology of Social Movements* (Wiley) H. Cantril takes up specific events in current history, such as war, radio, and propaganda. In an American Youth Commission report on the leisure and recreation of young people, C. G. Wrenn and D. L. Harley outline the arrangements which the Federal Government has made: *Time On Their Hands* (Amer. Council Educ.). S. H. Britt has contributed the outstanding work of the year in the field of *Social Psychology of Modern Life* (Farrar & Rinehart). W. Healy and B. S. Alper estimate that over 90% of *Criminal Youth* (Commonwealth Fund), who are treated by the "Borstal System" of highly individualized training for offenders of 16-23 years of age, become good citizens.

Evolution.—G. H. Estabrooks' thesis in *Man the Mechanical Misfit* (Macmillan) is that our present aggressive civilization is leading to human extinction; this biological trend must be redirected through the use of our reason. N. E. Miller and J. Dollard describe the processes of *Social Learning and Imitation* (Yale). Social adjustment is measurable in a manner similar to intelligence; L. A. Lurie and others employ Doll's Social Maturity Scale, etc., to derive a "Social Quotient" as a supplement to the I.Q.; subjects with low I.Q. have S.Q.'s grouped closely around the average of the group; high I.Q.'s often go with low S.Q.'s (*Amer. J. Orthopsychiat.* Jan.).

Ferals.—In *Wolf Child and Human Child* (Harper) A. Gesell describes the wolf children found in India 20 years ago; reared until the age of eight in an orphanage, the surviving of the sisters required two years to acquire her first word, three years to stand erect, six years for walking; at 17 years when death occurred she had the social behavior of a normal three-year-old. An interesting commentary on "the significance of feral man" (*i.e.*, wild humans reared in isolation from other humans), W. Dennis indicates the common characteristics in the 18 authentic cases on record; the persistence of mutism, the four-footed locomotion, the temper tantrums and the sulks, all indicate the tremendous influence on human nature of the first years of life (*Amer. J. Psych.*, July).

Races.—H. Meltzer gives an excellent detailed account of the development in school children, grade by grade, of their opinions regarding various races, and the sources of the opinions (*J. Psych.*, Mar.). For those who are interested in measuring race differences a certain distinction is confirmed in the cranial indices of European, Mongoloid, and Negroes (*Hum. Biol.*, Feb.). S. A. Sieber and F. H. Mueller offer *The Social Life of Primitive Man* (Herder).

Nationalism.—In a psychoanalysis of "nationalism," L. Fessler exposes the primitive origins of aggressiveness which should be redirected at an early stage in society so as to avoid their accumulation into a "terrifying expansion of nationalism" (*Psychoan. Rev.*, July). G. K. Zipf argues that in social and national life the "psychological man" dominates the "economic man"; this has occurred to produce war in Europe; American nations are also drifting toward psychological motivations: *National Unity and Disunity* (Principia). H. Watkin's description of "the psychologist's role in the national emergency" including probelms of maintaining democracy as well as problems of war (*Psych. League J.*, Jan.).

PRACTICAL

Personnel.—"What is wrong with personnel management?" asks C. A. Drake, and answers that too many personnel men, even though experienced in the details of the business, do not assume a professional attitude regarding the necessary precision of the testing program for employees (*Personn.*, Nov.). The third edition of *Personnel Management* (McGraw-Hill) by W. D. Scott, R. C. Clothier, and others continues to be the leading authority for industrial employers. A new contribution is F. J. Roethlisberger's *Management and Morale* (Harvard). A reliable pamphlet on *The Fields of Personnel Work* by J. G. Darley and R. F. Berdie is a volume in the American Job Series. Youth's choice of a vocation is determined by personal associates, especially relatives, and secondarily by opportunities, according to P. Hampton (*J. Appl. Psych.*, Aug.). A new way to show the advantages of rest pauses in physical work is given by L. H. Sharp who measured the residual tension which piles up allowing for less expenditure of energy for a period of time; later the tension declines below a pre-work level; in ergographic performance the tension builds up for 15 minutes (*J. Exper. Psych.*, July).

Safety.—A. Adler suggests that many of the repeated accidents in industry are due to wrong attitudes of the offenders, especially attitudes of bitterness and hopelessness (*Amer. J. Psychiatr.*, July). C. S. Slocombe outlines a "psychology of safety" which involves a state of satisfaction and tranquillity in the worker, and a complete conviction of the necessity for caution instilled by an effective and respected safety director (*Personn.*, Sept.). A. K. Britnall describes the measurements made of the actual driving habits of commercial drivers; the results show that good drivers are moderate in their acceleration rate—they resist the "thrill of maximum acceleration" (*J. Soc. Psych.*, Aug.). L. S. Selling reviews sample cases of hit-run auto drivers who exhibit def-

inite subnormal or abnormal mentality (*Amer. J. Psychiatr.*, July).

Business.—Outlining a psychology of motivation for advertisers, C. N. Aller says that "all motives are contemporary;" the mature motives are distinctly different from the "drives" of infancy; "the tie is historical, not functional;" adult motives are measured in terms of their functional autonomy (*J. Appl. Psych.*, Aug.). An informative and practical book on many phases of business, worker efficiency, and industrial sociology is H. W. Hepner's *Psychology Applied to Life and Work* (Prentice-Hall); there is a special discussion of women employees, also a description of advertising research.

AFFECTION

Emotion.—L. H. Lanier measured the galvanic skin response of subjects while they gave verbal reactions to the Kent-Rosanoff list of words and found that cases of mixed feelings, or conflict, toward words produced a greater galvanic response (*J. Psych.*, Mar.). In emotional reactions of respiration, pulse, and blood pressure, H. V. Gaskill and G. M. Cox issue the warning that statistical covariance will be misleading, because the relation between these physiological processes is complex although determined by definite rules (*J. Gen. Psych.*, Apr.). Studies of emotions concern themselves mainly with the autonomic nervous system and its chemical accompaniments, and these, as W. A. Hunt indicates, are not yet satisfactorily blended with emotional phenomena such as the social phases of emotional expression or the childhood origins of expression (*Psych. Bull.*, May). R. I. Watson and V. E. Fisher present an inventory of "affective potency" which constitutes a distinct factor of personality (*J. Psych.*, Dec.).

Aesthetics.—*The Aesthetic Sentiment* (Sci-Art) by H. Lundholm proposes a way to reveal the presence of conative striving in mental life through creativity in art. The authority, C. E. Seashore, explains *Why We Like Music* (Ditson) in a non-

technical book in which he shows how music can be enjoyed by everybody. The response of pre-school children to pictures, according to E. W. Amen, is to interpret in terms of static form, and then at an older age, in terms of activity, and eventually in terms of inner activity or feeling; there is great individual difference in the degree of projection of the self into pictures (*Genet. Psych., Monog.*, May). Using the Thurstone attitude measurement method, J. B. Cohen has constructed a scale of esthetic appreciation (*J. Psych.*, Dec.). W. B. Singer and P. T. Young have also produced a new affective rating scale (*J. Gen. Psych.*, Apr.). E. Harms uses artistic expression in children as a diagnostic measure of behavior problems (*Amer. J. Orthopsychiatr.*, Apr.).

CHILDHOOD

Growth.—R. S. Woodworth has surveyed the recent investigations of twins and foster children in *Heredity and Environment* (Soc. Sci. Res. Counc.). M. B. McGraw traces the gradual development of the infant's ability to use its hands; there are six phases of neural maturation: passive, object-vision, visual-motor, manipulative and deliberative, visual release, and mature phase (*J. Psych.*, Jan.). C. E. Skinner and others present the physiological, social and educational *Essentials of Child Psychology* (Macmillan). In a full record including motion pictures, A. Gesell and H. Thompson show the growth of a set of twins from infancy to 14 years; their differences in tempo, energy and personality patterns are mainly due to bodily rather than social factors (*Genet. Psych. Monog.*, Aug.). S. Feldman interprets man's life-career in terms of developmental stages of infant coordination and orientation, childhood domestication, adolescent individualization and parting of generations, adult self-realization and appraisal and senescent retirement (*Amer. J. Psych.*, Jan.).

Behavior Problems.—Several recommendations are offered by A. Long regarding the influence of home and

parents on the child's moral development (*Child. Dev.*, Mar.). Seventy-five per cent of cases of nail-biting are stopped by putting a bitter quassia solution on the child's nails: A. L. Billig (*Genet. Psych., Monog.*, Aug.). Regarding the controversy and condemnation of the present day fad of "comic books," L. Bender and R. S. Lourie are inclined to see in these books some favorable elements such as group loyalty, sex equality, desexed relationships, as well as the old-fashioned defeat of noxious aggression (*Amer. J. Orthopsychiatr.*, July).

Clinical.—S. Ackerly recounts the history of guidance clinics (*Amer. J. Psychiatr.*, July). S. D. Porteus tells of the directive aspects of *The Practice of Clinical Psychology* (Amer. Book). Mothers often attempt to solve their own problems through the complaints about their children at the guidance clinics, declares J. Silberpfennig (*Amer. J. Orthopsychiatr.*, July). Regarding the *Psychology of the Physically Handicapped* (Crofts), R. Pintner and others discuss tuberculosis, malnutrition, epileptic symptoms in addition to the usual topics of lameness, blindness, and deafness. A new journal *The Nervous Child* is edited by E. Harms; the first issue has a review by B. Glueck on the past "twenty years of child guidance."

INTELLECTUAL PROCESSES

Efficient Thinking.—In "an attempt to measure scientific thinking," M. D. Engelhart and H. B. Lewis offer a standardized set of objective, multiple-choice problems (*Educ. & Psych. Meas.*, July). C. G. Wrenn and R. P. Larsen have a brief, useful pamphlet on *Studying Effectively* (Stanford). "Inner speech" has long been regarded as an aid in most types of thinking, and D. H. Fryer shows that it is also present in automatic mental work such as speed additions (with totals less than ten); Fryer urges that attempts to eliminate articulation from learning should not be used in education (*Amer. J. Psych.*, Oct.). Words have a configurational (or Gestalt) character of their own, claim M. Nissenson and

S. S. Sargent, who show that there is greater effectiveness in combined words than in their use separately (*J. Exper. Psych.*, Jan.).

Intelligence.—An interesting story of "the growth and decline of intelligence" by G. D. Stoddard traces the fortunes of the I.Q. concept and its partial discredit (*Educ. Rec.*, Jan.). E. A. Nifenecker (N.Y.C. Bd. Educ.) has a useful Supplementary Guide For Scoring the Revised Stanford-Binet Intelligence Scale. E. H. Ebert finds discrepancies for the years 7, 8, and 9 between the old and new Stanford-Binet scales (*J. Psych.*, Jan.). O. K. Buros' latest *Mental Measurements Yearbook* (Rutgers) is indispensable to testers. H. Babcock offers a "level-efficiency" theory of intelligence in which actual mental functioning is distinguished from capacity (*J. Psych.*, Mar.). D. Starch and others present *Psychology in Education* (Appleton-Century).

Acquisition.—Some of the individual difference in learning is due to differences in attention; L. J. Cronbach has experimentally recorded differences in visual fixation-length, reversal ration, etc. (*Amer. J. Psych.*, Apr.). When we learn to respond to a new stimulus what happens to the original response? L. D. Long concludes in agreement with Hilgard and Marquis that the original response is not inhibited (as Pavlov thought) but persists in a subordinate way with a mutual dependence between the new and old responses (*Arch. Psych.*, Apr.). The cause of forgetting is often due to interference of other impressions which block earlier impressions; this is the common "retroactive inhibition;" A. W. Melton and W. J. vonLackum find that the interference begins when the other impressions are first being received and simultaneously conflict with recall at that moment; this process is called "proactive inhibition" (*Amer. J. Psych.*, Apr.). J. Dispensa and M. E. Barrett find there is no improvement in maze learning in rats under dosages of benzedrine; overdosages affect learning unfavorably (*J. Psych.*, Mar.).

PHYSIOLOGICAL

Brain Waves.—The electric voltage fluctuations in the brain develop gradually in their magnitude from the time of birth to childhood: J. R. Smith (*J. Psych.*, Mar.). J. R. Knott and C. E. Henry show that the conditioning process of learning may block the alpha rhythm electroencephalograms which reflects the relationship between mental action and physiological process (*J. Exper. Psych.*, Feb.). In sleep the alpha rhythms of all persons are almost identical; thus it appears that the process is due to the native, cortical organization rather than a product of experience: C. E. Henry (*ibid.*, Aug.-Sept.). See J. R. Knott's general review (*Psych. Bull.*, Dec.).

Glands.—G. Crile offers a "neuro-endocrine formula for civilized man" which includes an increased activity of the thyroid gland and decreased activity of the adrenal gland (*Educ. Rec.*, Jan.). J. P. Seward believes that behavior is influenced by hormonal induction directly into the central nervous system beside the indirect effects through the bodily organs (*Psych. Rev.*, July). Positive influence of prenatal endocrine therapy in rats is established by J. Dispensa and R. T. Hornbeck who found improved learning ability in rat offspring from optimal prenatal thyroid administration, less clear effect of anterior pituitary extract, and good results from the follicular gonadotropic hormone (*J. Psych.*, Dec.).

Alcohol.—R. C. Carroll gives a practical discussion of the causes and treatment of alcoholism in *What Price Alcohol?* (Macmillan); the book broadly conceives the problem as including a wide scope from tissue-oxidation to moral purpose. In an extensive review of the non-propaganda literature on "Alcohol," H. Marshall cites the many attacks upon the problem, but laments the lack of uniformity in the various studies, and also that the majority of the work, which has been done on animals, is but slightly applicable to human problems (*Psych. Bull.*, May). H. W. Haggard and E. M. Jellinck offer Al-

cohol Explored (Amer. Assoc. Adv. Sci.).

Behavior.—E. A. Hooton has traced the relation of body and behavior through the fields of animal evolution, racial contrasts, and individual differences of physique to show the reasons for differences in kinds of temperament and action: *Why Men Behave Like Apes* (Princeton). E. B. Greene gives a wide assortment of *Measurements of Human Behavior* (Odyssey) which includes an evaluation of the kinds of test methods employed. E. R. Carlson describes in *Born That Way* (John Day) the methods of motor learning used to benefit those palsied by birth injuries. Every person has unique motor coordinations due to "self-differentiation" arising in nerve centers before birth; thus many mannerisms are not learned postnatally: P. Weiss (*Comp. Psych. Monogs.*, Sept.).

SENSORY

Vision.—S. H. Bartley gives a basic study of *Vision* (Van Nostrand) with an historical introduction by E. G. Boring. C. Berger finds that the "minimum visible" is best in low illumination (rather than high illumination which causes a dispersion of light on the retina); the perceived minimum requires at least three intervening rods on the retina (*Amer. J. Psych.*, July). M. A. Tinker shows that people are inclined to prefer an intensity of illumination for reading that is proportionate to their state of brightness adaptation; this degree of intensity varies, and is not necessarily the brightness most suitable for good vision (*ibid.*, Oct.). An adequate examination of vision should include a test for "aniseikonia" (difference in size of image in each eye): P. Boeder (*Optom. Wkly.*, Aug.). Pictures viewed through a magnifying glass assume three-dimensionality, reports H. Schlosberg, if the observer views it with a perceptual attitude (*Amer. J. Psych.*, Oct.). Visual after-images seem to change size according to the effort of the eyes to converge; the ocular kinaesthetic sensations participate in determining the perception of

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size: F. V. Taylor (*J. Exper. Psych.*, July).

Audition.—S. S. Stevens, C. T. Morgan, and J. Volkmann sought to define the "neural quantum" involved in discerning a given tone; they conclude that a definite number of nerve fibers serving as a "functional unit" (rather than as a structural unit) underlie a given tonal experience (*Amer. J. Psych.*, July). There is an elementary magnitude of sound, according to S. Lifschitz (2db for 1,000 cycles) which is similar to the elementary quantities in the other sense modalities (*J. Acous. Soc. Amer.*, Nov.). In localizing sound the eye-movements which the observer makes affect the judgment; this commonly happens in ventriloquism and also in some cases of brain pathology: T. A. Ryan and F. Schehr (*Amer. J. Psych.*, Apr.).

Body Senses.—S. Rothman reviews the physiology of itching (*Physiol. Rev.*, May). The work on touch and other skin senses is reviewed by W. L. Jenkins and J. Stone (*Psych. Bull.*, Jan.). F. N. and M. H. Jones find greater sensitivity to pressure on hairy regions of the skin than on the hairless, as measured by "chronaxy" (nerve excitation-time); the skin on hairless regions is thicker; pain chronaxies do not exhibit this difference in the two kinds of skin areas (*Amer. J. Psych.*, Apr.). The vibratory skin sense varies with temperature; this implies the need of a chemical theory to explain this type of sensitivity: J. Weitz (*J. Exper.*

Psych., Jan.). Practice increases the efficiency of the sense of balance as well as reduces the nystagmus eye-movements (*J. Psych.*, Mar.).

ANIMALS

Sociability.—Ants display both a colony-pattern of social organization and a set of individual social responses, reports T. C. Schneirla; the young ants are taught to eat, are led around the nest and taught domestic duties, especially the care of larvae; the colony functions are begun when the body structure of the young ants arrives at the proper development, e.g. large head and mandibles needed by the workers; the whole system is described in terms of growth and learning rather than instinct (*Psych. Rev.*, Nov.).

Mentality.—C. J. Warden and W. E. Galt tested two cebus and two rhesus monkeys on a problem of selecting a series of appropriate rakes for obtaining food; after two years the task was relearned readily by all four animals, but when the task was made more difficult the cebus monkeys were distinctly superior to the rhesus (*J. Psych.*, Jan.). Chimpanzees are strongly social and sympathetic; they form definite preferences for the companionship of certain others; they also show a scale of dominance within the group: V. Nowlis (*Comp. Psych. Monog.*, March). Individual differences in "emotionality" are similarly found in rats, according to E. C. Tolman, F. M. Geier and M. Levin (*ibid.*, May).

PHILOSOPHY

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MEETINGS

The congresses, conventions, and meetings of various philosophical groups were many in the United States in 1941. The American Philosophical Association held its divisional meetings: the Eastern at Philadelphia at the end of December, 1940, in con-

junction with the A.A.A.S. and the Association for Symbolic Logic, where the problems of mind, phenomenology, science, and value were stressed; the Western at Indianapolis in April, with accent on the problem of causality and the role of philosophy in higher education. The Southern So-

ciety for Philosophy and Psychology met at Washington, D.C. in April and included a joint session on philosophy and psychology. The Sixth International Congress for the Unity of Science met at Chicago in September, where the problems of the unification of scientific knowledge were accentuated. The Second American Congress on General Semantics met at Denver in August. The Conference on Method in Philosophy and the Sciences met in New York in April where the chief topic was the personal, social, and scientific significance of differences in philosophical method.

GENERAL PUBLICATIONS

Books and articles of general interest in philosophy during the year were: B. Brownell's *The Philosopher in Chaos* (Van Nostrand), a recommendation for a rational decentralization of the instruments of power; C. J. Ducasse's *Philosophy as a Science* (Piest), a plea for "scientific method" in handling philosophical problems; J.B.L. Penrose's *Philosophy for Lovers* (Whitman), a popular treatment; H. N. Wieman's "The Responsibility of Philosophical Inquiry" (*Journal of Philosophy*, '41, 365-374), its responsibility being to return to an inquiry regarding the "most pervasive structures of causality and value"; Dewey's "The Objectivism-Subjectivism of Modern Philosophy" (*Journal of Philosophy*, '41, 533-542).

The Library of Living Philosophers published the discussion of the Anglo-American Philosopher, A. N. Whitehead (Northwestern Univ. Press). E. B. McGilvary gives a sympathetic review of the last philosophical words of Woodbridge in his *Essay on Nature* (*Journal of Philosophy*, '41, 141-155).

America has become more or less the leader in a philosophical movement called "phenomenology" which was inaugurated by the late German philosopher, Edmund Husserl. In 1940, the phenomenological groups organized a new journal devoted to articles connected with this movement; in 1941, appeared a volume of essays by various American philo-

sophers in memory of Husserl (Harvard Univ. Press). For the uninitiated, M. Farber explains "The Function of Phenomenological Analysis" (*Journal of Philosophy and Phenomenological Research*, '41, 431-441).

The war, besides increasing the philosopher's interest in things sociological and things American, has brought to mind those figures in the history of philosophy who in one sense or another may be called partially responsible for the world changes that are occurring. The German philosopher Nietzsche, whether rightly or wrongly, is popularly associated with the doctrine that might makes right. The year saw two American contributions on Nietzsche's philosophy, C. Brinton's *Nietzsche* (Harvard Univ. Press), discussing the relation between Nietzsche's philosophy and the rise of Naziism, and G. A. Morgan's *What Nietzsche Means* (Harvard Univ. Press), a general appraisal of Nietzsche's philosophy 60 years after.

HISTORY OF PHILOSOPHY

General.—Two excellent textbooks were published during the year. *History of Philosophy* (Crofts) by Martin, Clark, Clarke, and Ruddick is a penetrating and learned treatment of Greek, Medieval, and Modern Philosophy through Kant, and W. K. Wright's *A History of Modern Philosophy* (Macmillan) emphasizes the prevailing trends—individualism, internationalism, and scientific approach. *Landmarks for Beginners in Philosophy* by I. Edman and H. Schneider (Reynal and Hitchcock) presupposes no knowledge of philosophy and is a fine elementary introduction to the field. Of interest also to the historian of philosophy will be the publications of the University of Pennsylvania Bicentennial Addresses (U. of P. Press), especially *Studies in Civilization and Studies in the History of Science*. Noteworthy in the first is W. S. Ferguson's "The Artistic and Intellectual Contribution of Greece" and J. H. Randall's "Unifying Factors in the Development of Modern Ideas"; and in the second E. A. Singer's "Logico—His Formal

Study of Mechanism, Vitalism and Naturalism."

Greek.—The pressure of contemporary conditions is reflected in the literature on ancient philosophy. Kurt von Fritz discusses the nature and extent of the influence of the Pythagoreans in *Pythagorean Politics in Southern Italy* (Columbia Univ. Press) and A. D. Winspear in *The Genesis of Plato's Thought* interprets Plato's philosophy in terms of social, economic, and political background. Another significant volume, *Plato's Earlier Dialectic* by R. Robinson, has been published by Cornell Univ. Press. Other outstanding articles on Plato are "On the Tribal Courts in Plato's Laws" (*American J. Phil.*, 62:312) by G. Morrow and G. Vlastos on "Slavery in Plato's Thought," (*Phil. Review*, 297:289-305). There are also outstanding contributions to the translations of Greek texts. Lane Cooper has translated sympathetically the *Enthyphro*, *Apology*, *Crito*, and *Phaedo* and added an introduction and notes in *Plato—On the Trial and Death of Socrates* (Cornell Univ. Press). Random House has put out the *Basic Works of Aristotle*, edited by R. McKeon, which is an admirable companion to the volumes of Plato. E. R. Goodenough's study, *An Introduction to Philo Judaeus* (Yale Univ. Press), considers Hellenistic Judaism as a bridge between Greek and Early Christian Thought.

Medieval.—A group of scholars has contributed to *Essays on Maimonides*, edited by S. Baron (Columbia Univ. Press). It shows the significance of Maimonides' philosophy, economics, and jurisprudence as well as his influence on Jewish, Moslem, and Christian culture. Several other volumes discuss the development of thought through this period: *Christianity and Classical Culture* (N. Y.: Oxford Univ. Press) by C. W. Cochrane begins with Augustine and extends to Aquinas; *A Guide to the Intellectual History of Europe from St. Augustine to Marx* (Ginn) by F. B. Artz is self-description; as is also the *History of Magic and Experimental Science* (Columbia Univ. Press vols. 5 & 6) by L.

Thorndike. These volumes, covering 1500 to 1630, indicate that men were seeking the secrets of Nature rather than its laws but were showing some independence in thinking.

Modern.—The work in this period falls into three classes—the treatment of the philosophers as such, more general analyses of problems, and the consideration of men significant in modern political thought. As examples of the first there is H. A. Grubb's book on *Jean-Baptiste Rousseau* (Princeton Univ. Press) as well as E. E. Powell's new edition of *Spinoza and Religion* (Chapman and Grimes). *The Philosophy of Schleiermacher* by R. B. Brandt (Harper) is another case in point; the emphasis of this latter volume is on ethics and religion. P. A. Schlipp has edited the latest addition to the Library of Living Philosophers (Northwestern Univ. Press), 18 essays on the *Philosophy of George Santayana* and J. Buchler has arranged the selections of Peirce in the *Philosophy of Peirce* (Harcourt, Brace, International Library of Psychology, Philosophy and Scientific Method).

Examples of general treatment include *From Beast-Machine to Man-Machine* by L. C. Rosenfield (N. Y.: Oxford Univ. Press). This book discusses the possibility of animal psychology as distinct from physiology. E. V. Souleyman draws from the same period in her *Vision of World Peace in the 17th and 18th Century* (Putnam).

The third group of books under the modern heading are most numerous. They reflect modern interests and might properly be included under ethics as a branch of social philosophy. It is only natural that philosophers should seek the antecedents of contemporary German thought in German tradition. W. M. McGovern traces the history of Fascist and Nazi political philosophy in *From Luther to Hitler* (Houghton Mifflin) and E. Müller-Sturmheim echoes this theme in his article "From Kant to Hitler" (*Quart. Rev.* 276: 80-91.) H. Marcuse examines the Hegelian doctrine in relation to the rise of modern social

theory in *Reason and Revolution* (N. Y.: Oxford Univ. Press), while J. G. Gray finds the source of Hegel's view of history in the religion, social ethics, and philosophy of the Greeks in *Hegel's Hellenic Ideal* (Kings Crown Press). And finally, *Darwin, Marx and Wagner* (Little, Brown) by J. Barzan relates the struggle for existence, an economic interpretation of history and nationalism in art to one another and to present-day problems.

ETHICS

A convenient initial division in this field may be made between the material relating to ethics viewed as an individual problem and social ethics. Here more than any other place, modern social and political conditions have directed constructive thinking, and thus the overwhelming emphasis is on social philosophy. In the first category is W. H. Robert's *The Problem of Choice* (Ginn); Roberts conceives the main problem of ethics to be the nature of the self and the goals it chooses. F. C. Sharp's article (*Phil. Rev.*, 297: 253-268), "Voluntarism and Objectivity" contributes to an old problem of individual morality for it insists that the source of all voluntary action, whether it aims at the good of self or of others, is the same. P. Weiss contributes two articles that belong to this division: "Golden Rule," (*Journal of Philosophy*, 16: 421-430) and "Adventurous Humility—Man in relation to nature" (*Ethics*, 51: 337-48).

Under the heading of social ethics may be distinguished attempts to determine the place of Philosophy in modern affairs. H. N. Wieman thus writes on the "Responsibility of Philosophic Inquiry" (*J. Phil.*, 38: 365-74) and M. C. Otto on "Philosophy in a Time of Social Crisis" (*J. Social Phil.*, 6: 293-301). With particular respect to democracy there are the extended articles in the July and October issues of the *Thomist*. "The Theory of Democracy," by M. J. Adler and W. Farrell; one aim is to show on moral grounds that democracy is the best form of government. *The Recreation*

of the American Spirit in Emerson, Whitman, James and Dewey (American Council on Public Affairs) by J. Nathanson and the Symposium on *Science, Philosophy and Religion* are in the same vein. Mention must be made here of two more theoretical treatments—E. L. Thorndike's *Human Nature and the Social Order* (Macmillan) and R. L. Warren's "Philosophy and Social Science in the Field of Value" (*J. Phil.*, 15: 404-9).

Another very important phase of social ethics is Jurisprudence. William Leary points out the differences between natural law lying at the basis of American Jurisprudence and the competing theories in *Natural Law and the Totalitarian State* (Salt Lake City). *Law without Force* (Princeton Univ. Press) is a strong analysis of the place of politics in international law and a constructive attempt to show the way out of the lawlessness of the present. E. N. Garland illustrates the functional approach to legal problems and ideals from Holmes, Cardozo, and Pound in *Legal Realism and Justice* (Columbia Univ. Press). And reference must be made to one of several excellent articles by G. Gurvitch, "The Problem of Social Law" (*Ethics*, 17-40).

PHILOSOPHY OF RELIGION

One of the outstanding achievements in this field is the inexpensive one-volume edition of the classic *Golden Bough* (Macmillan) by Sir James G. Frazer. This and the papers on *Religion and the Modern World* from the Bicentennial of the University of Pennsylvania (Univ. Press) are invaluable as approaches to this field. There are three other general works of significance: W. F. Albright's *From Stone Age to Christianity* (Johns Hopkins) which shows the development of the idea of God in its historical context; M. J. Bradshaw's *Religious Philosophies of Great Modern Philosophers* (Columbia Univ. Press), which shows their compatibility with faith; and finally, *A Preface to Christian Theology* (Macmillan) by J. H. Mackey.

AESTHETICS

There is a tendency to depart from the historical treatment of the problems of Aesthetics and to develop more positive theory. C. H. P. Thurston examines aesthetics as a science and looks toward a possible scientific method in *The Structure of Art* (Univ. of Chicago Press). In the *Journal of Philosophy* (13: 350-59) D. W. Gotshalk published "A Relational Theory of Fine Art." He conceives that the function of art is to feed pure perception but its consequence is to feed the backgrounds of personality which are determinants of social behavior. M. Rader considers some of the essential values of aesthetic experience that derive from Plato's treatment of art in "The Root Values of Art" (*Journal of Philosophy*, 12: 324-32). In conclusion it is desirable to mention M. K. Munitz's article "Toward a Philosophy of Art as Creation," (*Hm. Sch.*, 4: 472-82).

EPISTEMOLOGY

The branch of Philosophy called epistemology has as its central problem the general account of the way in which we come to know certain statements to be true; its problem, then, is essentially a methodological one: by what method do we arrive at the truth of certain propositions? A solution of the problem peculiar to America is that usually designated by the term "pragmatism," presented by Charles S. Peirce and expounded by William James. Another important solution has been offered in the writings of A. N. Whitehead. A comparison is made of these two philosophies by V. Lowe in "William James and Whitehead's Doctrine of Prehensions" (*Journal of Philosophy*, '41, 113-126). Another interesting comparison is made between Whitehead and Hume in a series of articles by J. W. Kolson, M. W. Gross, and H. Taylor entitled "Whitehead's Answer to Hume" (*Journal of Philosophy*, '41, 85-102, 409-416) and between James and Husserl in "William James Concept of the Stream of Thought Phenomenologically Interpreted" (*Journal of Phil. and Phen. Research*,

'41, 442-452). Another significant comparison is made in Dewey's "Propositions, Warranted Assertibility, and Truth" (*Journal of Philosophy*, '41, 169-186) in which Dewey answers Russell's criticisms of his epistemology as given in *An Inquiry into Truth and Meaning*.

A critical survey of the theories of knowledge is given in Ledger Wood's *The Analysis of Knowledge* (Princeton Univ. Press, '41), where it is emphasized that the characteristic of conscious experience is a reference to something beyond itself.

Those who believe that at least one path to man's knowledge is by way of "intuition," that function of the human mind which makes one immediately aware of the truth of certain statements, will be interested in N. P. Stallknecht's "Intuition and Problems of Philosophy" (*Philosophical Review*, '41, 396-409); arguing against the contention that intuition is a faulty criterion of truth because of the vagueness of its applicability, he states that intuition should be checked by its coherence with the whole body of human knowledge.

The problems of epistemology are so diffuse that any comprehensive outline would be impossible here. During the year there seems to have been no problem that received particular attention. On the problem of language, H. Gomperz discusses "The Meanings of 'Meaning'" (*Philosophy of Science*, '41, 157-183) and urges "common sense" as the solution of these epistemological problems; R. B. Winn in "The Nature of Relations" (*Philosophical Review*, '41, 20-35) presents a solution of the old paradox that, since relations are related to their relata, for any relation we must have an infinity of relations; he simply denies the premise that relations are relatable to themselves or their relations; R. Ekstein analyzes what is meant by a "Philosophical Refutation" (*Journal of Philosophy*, '41, 57-67) by emphasizing the language aspect; and W. N. Roberts asks "Experience—Noun or Verb?" (*Journal of Philosophy*, '41, 542-549) in an attempt to throw new light on old prob-

lems by considering experience and its aspects as verbs.

At the December (1940) meeting of the Eastern Division of the American Philosophical Association, a symposium was held on the problem of the nature of mind with papers by W. H. Sheldon (whose thesis was that the concept of mind depends for its meaning on the concept of desire), B. Blanshard (mind is a set of processes controlled by an immanent end), and C. I. Lewis (offering no definition of, but several assertions about, mind, *e.g.*, that our belief in minds is better confirmed than some of the "accepted" theories of physical science, apparently ignoring, as E. A. Singer mentions in the discussion, all the behaviourist criticisms of these old claims).

P. C. Jones considers "Idealism and its Relation to Science" (*Philosophy of Science*, '41, 142-146), and R. Allers takes up a problem of importance for the modern Thomist, "The Intellectual Cognition of Particulars" (*The Thomist*, '41, 95-163).

PHILOSOPHY OF SCIENCE

The philosophy of science each year attracts more interest in wider fields; it has its source in the theory of knowledge, or epistemology, but considers the apparently narrower problems relating to experimental method. Its defining problem might well be that of presenting a definition of evidence. For some philosophers the answers to all the traditional philosophical problems of epistemology are to be found in the philosophy of science, but others, especially those who separate the problems of metaphysics and science, would insist that the philosophy of science considers a narrower field than general epistemology.

One very positive indication of the growing interest in this field is the ever increasing number of articles written on the philosophy of the particular sciences. The importance of the field for mathematics is attested by the articles in symbolic logic, one of the problems of which is the philosophy of mathematics. The American Physical Society, at its June, 1941,

meeting in Providence, R. I., held a symposium devoted to the philosophy of physics. There, P. Frank talked somewhat disparagingly of philosophers in "Why Do Scientists and Philosophers so often Disagree about the Merits of a New Theory?" (printed in *Reviews of Modern Physics*, '41, 171-175), holding that, by the time the physicist is about to change his theories, the philosopher has just got around to accepting them; but both Margenau, in "Metaphysical Elements in Physics" and W. F. G. Swann, in "The Relation of Theory to Experiment in Physics" (*Reviews of Modern Physics*, '41, 176-196) seem to feel that philosophy plays an important role in the advancement of physics. In an article appearing in the *American Journal of Physics* ('41, 285-290), O. A. Grosselin discusses "The Relation of Physics to Philosophy."

In the comparatively young science of psychology, the problems of the philosophy of science have received special attention; in particular some psychologists are beginning to feel that the "classic" terms of their science need a new analysis if any progress is to take place. These new analyses presuppose a philosophic theory, and the one usually used is the "operational" movement of Stevens (and, particularly in Physics, Bridgman). This philosophy insists that scientific concepts, to be meaningful, must be referable ultimately to concrete, immediate experiences ("hard data") so that scientific propositions containing these concepts are "testable" by experiment. The doctrines, as so far expounded, contain very serious ambiguities and hence lead to somewhat futile disputes about terms. Examples of attempts to explain the application of these theories to psychology appeared in 1941 in C. Bergman's and K. W. Spence's "Operationalism and Theory in Psychology" (*Psychological Review*, '41, 1-14) and S. Koch's "The Logical Character of the Motivation Concept" (*Psychological Review*, '41, 15-38 and 127-154). W. J. Norton, Jr., in "Towards a Value Theory of Mind" (*Philosophy*

of Science, '41, 255-263), argues that psychology is not separable from philosophy and sociology in its study of mind. An ethnologist gives his philosophical reactions to his scientific activities in C. Bateson's "Experiments in Thinking about Observed Ethnological Material" (*Philos. of Science*, '41, 53-68). And, in Sociology, H. S. Fries contends that the problem of value is a real problem of science in "Virtue as Knowledge" (*Phil. of Science*, '41, 88-99).

One of the general problems of the philosophy of science concerns the meanings of scientific statements; it has been contended by certain positivists that a proposition is only meaningful if it is "verifiable"; hence some of the traditional metaphysical propositions concerning the existence of God, or a world independent of mind, are meaningless since not verifiable. The thesis is again vague, and various attempts have been made to explain what the term "verifiable" means; for instance, C. J. Ducasse, in "Truth, Verifiability, and Propositions about the Future" (*Phil. of Science* '41, 329-337) argues that verifiability equals truth, if verifiability is independent of the speaker and is a property of propositions alone. Few would deny that, despite the considerable research on this problem, a much deeper and more thorough analysis is essential before any results can be called decisive.

Another problem of fundamental importance for the philosophy of science is that of probability, since most of the assertions of scientific laws are only made in a probability-mode. This problem has its purely mathematical (so-called "theoretical") part, and its philosophical part, the latter being concerned with applications. In applications, most probability concepts derive from the notion of "equi-probable"; a number of apparent paradoxes result from this term, and P. H. Dotterer, in "Ignorance and Equal Probability" (*Phil. of Science*, '41, 297-303) gives solutions of some of them. E. C. Kemble, in "The Probability Concept" (*Phil. of Science*, '41, 204-232) gives an analysis and critical

summary of the "frequency theory," which has applications in all fields requiring statistical methods. C. J. Ducasse makes "Some Observations Concerning the Nature of Probability" (*Journal of Philosophy*, '41, 393-404), and G. Bergmann gives a summary of a well-known theory of "The Logic of Probability" (*American Journal of Physics*, '41, 263-272).

The phenomenological approach to the problems of the philosophy of science is discussed by E. Zikel in "Phenomenology and Natural Science" (*Phil. of Science*, '41, 26-32) and F. Kauffman in "The Structure of Science" (*Journal of Philosophy*, '41, 281-293). It is interesting to note that the latter regards all scientific truth as an approachable but unattainable ideal.

A work too broad in its scope to be summarized here is A. J. Ayer's *Foundations of Empirical Knowledge* (Macmillan).

LOGIC

The problems of modern logic are many, but may be divided conveniently into two parts, those concerned with formal or deductive science (so-called "mathematical" logic) and those concerned with epistemology or scientific method (including the language of science).

American mathematicians have made some of the most important contributions to mathematical logic, and there seems to be little doubt that the United States is the world leader in this very important subject. To the problem of precision and rigour in deductive systems H. B. Curry has significantly contributed, and in "A Revision of the Fundamental Rules of Combinatory Logic" (*Journal of Symbolic Logic*, '41, 41-43) he makes some further additions to his theory; a more or less popular treatment of the nature of mathematical systems is given in "Some Aspects of the Problem of Mathematical Rigour" (*Bulletin of the American Mathematical Society*, '41, 221-241). The problem of consistency is a central one in deductive science, and K. Gödel in "The Consis-

tency of the Axiom of Choice" (*Annals of Math. Studies*, no. 3) answers, at least in part, a fundamental problem of set-theory; many logicians have felt that the paradoxes and apparent contradictions that occur in the theory of sets (or numbers) are due to a certain assumption called the Axiom of Choice; Gödel shows in effect that this assumption is no more "guilty" than any of the others, that its addition to the other postulates of set theory (when construed in a certain manner) cannot give rise to a contradiction if the original set is consistent. A Tarski makes a plea for more research into a very neglected but important field of formal logic in "On the Calculus of Relations" (*Journal of Symbolic Logic*, '41, 73-89), where a survey of the topic is also given.

In the field of logic and its relation to the theory of knowledge, E. Toms in "The Law of Excluded Middle" (*Phil. of Science*, '41, 33-38) discusses a classic problem and claims to show that the law "Every statement is either true or false" does in fact hold in all those cases where it reputedly fails. The problem might well be laid to rest by an accurate analysis of its terms. Ordinary logic takes into consideration only declarative sentences; can it be generalized

to a consideration of imperatives? A. Ross considers this problem in "Imperatives and Logic" (*Theoria*, '41, 53-71). The applications of developments in symbolic logic are very difficult; B. Rosser in "On Many-valued Logics" (*American Journal of Physics*, '41, 207-212) gives a summary of the possibility of applying many-truth-valued logics in the realm of physics, and regards this possibility as highly speculative. For one interested in an account of some of these epistemological problems of logic with tentative solutions, there is A. Ushenko's *Problems of Logic* (Princeton Univ. Press).

In the history of logic, F. Solmsen gives a criticism of Ross in "The Discovery of the Syllogism" (*Philosophical Review*, '41, 410-421).

There were many introductions to logic in 1941; a very valuable translation from the German was made of Tarski's *Introduction to Logic and to the Methodology of the Deductive Sciences* (Oxford); W. V. Quine's *Elementary Logic* (Ginn) is a formalized and up-to-date introduction to certain theories of logic; A. Church discusses *Elementary Topics in Mathematical Logic* (Lieber); a beginner's text is that of A. M. Frye and A. W. Levi, *Rational Belief* (Harcourt, Brace).

ANTHROPOLOGY AND ETHNOLOGY

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GENERAL

As might be expected the impact of the European war and its consequent repercussions in this hemisphere was more clearly in evidence in the field of Anthropology in 1941 than it was in 1940. The effect of the war has been differential in nature, stimulating some branches of the field, and causing an almost complete cessation of activities in other branches. The trend toward seeking practical applications of the knowledge and techniques of Anthropology has greatly increased as

has research in Latin American countries. Archaeology, however, in Europe and Asia has almost come to a halt.

SOCIETY FOR APPLIED ANTHROPOLOGY

At the annual meeting of the anthropologists at Andover, the emphasis on practical applications was again apparent this year. This trend, however, received its greatest impetus from the founding of the Society for Applied Anthropology. In the meet-

ing of the Society last May, E. D. Chapple, C. M. Arensberg, D. L. Oliver, D. W. Lockhard, and F. L. W. Richardson, Jr. were elected officers. E. D. Chapple and C. M. Arensberg read papers on the application of Social Anthropological techniques to problems in industrial organizations. M. L. Wilson, R. S. Harris, and D. L. Oliver read papers on nutrition problems. C. P. Loomis and F. L. W. Richardson, Jr. told of their work in resettlement projects. The use of anthropology in the administration of native groups was discussed by R. Underhill, L. Thompson, F. G. Rainey, and J. Gillen. M. Field presented a paper on "Behavioral Factors in Mental Disease." M. Mead and W. E. Whyte read papers on social welfare, G. Bateson on national morale, and R. Benedict on personality and culture.

The character of the subject of these papers clearly shows the direction of the interests of this Society. The Society is to publish a journal to be called *Applied Anthropology*, with E. D. Chapple as editor. "It is based upon the premise that a science of human relations can only be developed if theories are tested in practice." The aim of the Society is to develop a practical science of human reactions. It is not unnatural that this movement should spring up among the anthropologists. Indeed it has been developing among them for some time.

The anthropologists differ from all other social scientists in that they have studied man as a whole and have themselves made the observations on the subjects of their study. "The anthropologist, until recently concentrating on non-European groups, has had to remain unspecialized, or rather has had to combine in one person all the specialties. . . . Because of this lack of specialization, the anthropologist learned to look at man without omitting any because they were traditionally assigned to another subject. He was enormously aided in developing a general point of view because of the wide diversities in ways of life of the groups he had to study. Any generalization had to be checked against markedly different cultural

situations. Thus when the anthropologist finally moved to consideration of his own culture, he had learned an objective and a general point of view which stood him in good stead." The quotations are from the prospectus of *Applied Anthropology*. The trend here evidenced is a healthy one. Too long have social scientists had to admit they had achieved no practical knowledge; too seldom have they checked their theories by the hard test of putting them into practice.

SOCIAL ANTHROPOLOGY

This year appears the first systematic text book covering the whole field of social anthropology and ethnology. *The Principals of Anthropology* by E. D. Chapple and C. S. Coon, which should prove invaluable to students in this field and indeed to those who have advanced well beyond that stage.

D. L. Oliver of Harvard has been analysing his Melanesian material and has several important papers in press. He is now studying an agricultural community in Iowa.

F. L. W. Richardson, Jr. of Harvard has completed his study of the Penn-craft Resettlement project.

E. D. Chapple is continuing his studies of neurotics and psychotics and has important papers on this subject in press, developing objective techniques for describing and classifying neurotic and psychotic individuals. The publication of *Deep South: a study of social class and color caste in a Southern city* by A. Davis, B. B. Gardner and M. R. Gardner should be noted. The research for this book was done under the direction of W. L. Warner, by four anthropologists, a white man and his wife, and a negro and his wife. Thus it represents the work of people able to mix with both castes in the community they studied. Not only is this book noteworthy in that it represents the first all-sided study of a Southern community, but also in that it represents the first appearance of new objectives and convenient methods in the analysis of social structure.

A study of Negro personality de-

velopment in a Northern city, *Color and Human Nature* by W. L. Warner, B. H. Jinker, and W. A. Adams appeared this year.

In *The South Seas in the Modern World* by F. M. Keesing, there is a study of the population trends, economics, native policy, education, health, land use, and adjustment between native and European groups throughout Polynesia by an anthropologist of the University of Hawaii.

R. Redfield of the University of Chicago published his *Folk Culture of Yucatan*, in which he takes up the culture of five Yucatecan towns, varying on a scale of isolation from Merida, a "Europeanized" city, to Tusik, an almost completely isolated Indian tribal village. R. Redfield is continuing his researches in Guatemala.

C. Wagley's *Economics of a Guatemalan Village* and J. F. Embree's *Acculturation Among the Japanese of Kona, Hawaii*, both memoirs of the American Anthropological Association, are important contributions to the field.

I. Shapera's *Married Life in an African Tribe* was published in this country. It is the product of a study at the Kgatla of Bechuanaland protectorate made under the auspices of The School of African Studies at Capetown. B. Malinowski wrote a lengthy introduction for the book, pointing out the value of such work for administrators of native populations, and pointing to similar studies done on Southern committee in this country. I. Shapera's book is a valuable contribution, while any paper by B. Malinowski is deserving attention. The year has been one of marked progress in Social Anthropology.

ETHNOLOGY TRENDS

An important trend in Ethnology, increasingly evident in 1941, is the interest in problems of culture change. The symposium on acculturation resulting in a series of six articles in the *American Anthropologist* is evidence of this trend. M. J. Herskovitz opened the series with a general article on the study of culture contact. The other articles, by F. Eggan, D. G. Mandel-

baum, S. Tax, W. R. Bascom and J. H. Greenberg, discussed particular examples of cultural contact respectively in the Northern Philippines, among the tribes of the Nilgiri hills in Southern India, in Guamtelma, among the Negroes of southern South America, and among the Hausa people of Africa. M. Siegel had written on "Religion in Western Guatemala: A Product of Acculturation" in the *American Anthropologist*, and J. F. Embree's work on acculturation among the Japanese of Hawaii have been mentioned.

ETHNOLOGY OF NORTH AMERICA

A large gap in the ethnology of North America was filled this year with the publication of M. E. Opler's *An Apache Life-Way* and G. Goodwin's *The Social Organization of Western Apache*. Opler's book presents a picture of life among the Chiricahua Apache. The life cycle of these people is traced from birth through childhood to adult life, marriage and death. The maintenance of the household and political and religious life are described. Goodwin's book represents the result of a long and close association with the people of whom he wrote. Seldom has any ethnological work been based on such intimate knowledge.

The volume of essays published in memory of Edward Sapir, *Language, Culture and Personality* edited by L. Spier, contains papers by many of Sapir's students and colleagues. These essays are grouped under four headings: problems of linguistic classification; linguistic behavior and thought; development of cultural patterns, and cultural forms and the individual. Here are evidenced the interests of Sapir and the strong trend in ethnology toward the consideration of problems of cultural growth and change which is also evidenced in the interest in acculturation noted above. There has, however, been little decrease in more purely descriptive work. V. M. Roediger's *Ceremonial Costume of Pueblo Indians* will be of interest to workers in the Southwest.

In *Bulletin 128* of the Bureau of

American Ethnology, important papers on the Iroquois by W. N. Fenton have appeared, and F. G. Speck has a paper on the Desert River Algonquin. W. V. Kinnietz has published a large work on *The Indians of the Western Great Lakes*, filling a long-felt need. A. Spoehr of the Field Museum reports on his researches among the Seminoles of Florida in a Field Museum paper. These pages formed the chief contributions for the Eastern area this year.

Two valuable papers on the Plains area appeared, E. C. Parson's, "Notes on the Caddo" and H. H. Turney-High's, "Ethnology of the Kutenai," both memoirs of the American Anthropological Association.

The University of California continues to put out its series of culture-trait distributions for the California and Basin areas.

Before turning from North America mention should be made of the exhibit of Indian Art in the United States held at the Museum of Modern Art in New York City. Archaeological objects, present-day works, and suggestions as to how Indian art objects might be used in modern life were shown. The exhibit created widespread interest and should help to make the American public appreciate the art and craft of the Indians. The exhibit was made under the direction of F. H. Douglas of the Denver Art Museum and R. D'Harnoncourt of Indian Arts and Crafts Board. Their catalogue, *Indian Art in the United States*, with its many illustrations, maps and text to give a cultural background to the objects, is of interest to professional anthropologists and laymen alike.

LATIN AMERICA

As to work done in Mexico and Central America, R. Redfield's work in Yucatan has already been mentioned. Probably A. M. Tozzer's translation of Bishop Landa's *Relations* is best classified as ethnology. This scholarly translation with its abundant footnotes and elaborately classified syllabus will prove invaluable to workers in the Maya field. G.

C. Vaillant's book *The Aztecs of Mexico* partially comes under the classification of ethnology and partially of archaeology. Both this and Tozzer's work afford examples of a trend to find a meeting-ground for ethnology and archaeology considered in the section on archaeology.

There is little material from South America this year. R. H. Lowie's paper on the Northern Ge tribes of Brazil in the *American Anthropologist* and J. Gillin's paper on the Quichua-speaking Indians of Imbabura might be mentioned. There has been a great influx of anthropologists, both ethnologists and archaeologists, into South America the past year and knowledge of that continent should greatly increase in the next few years.

EUROPE AND OTHER REGIONS

Of Europe, of course, little can be said, but courses in European Ethnology at Harvard, at Brooklyn College, and at several other Universities throughout the country indicate a growing interest in this field.

For the Southern Pacific there is J. W. Coulter's *Land Utilization in American Samoa*, published by the Bishop Museum. The Australian Natural Research Council in the journal *Oceania* continues to print excellent articles on this area. D. L. Oliver has several papers in press at the Peabody Museum of Harvard.

D. Forde's *Marriage and the Family Among the Yako in Southeastern Nigera* and Lin Yueh-Hwa's *The Miao-Man Peoples of Kweichow*, published by the Harvard-Yenching Institute, are important contributions on other parts of the world.

ARCHAEOLOGY IN THE UNITED STATES AND ALASKA

Several trends are noticeable in American archaeology this year; (1) to connect ethnology and archaeology through work at historical sites; (2) to establish local chronologies; (3) to tie these local chronologies together; (4) to search for early man in North America.

For the Eastern area D. Cross's *Archaeology in New Jersey* provides a summary of the archaeological situa-

tion in that state. F. M. Setzler's and J. P. Jennings' *Peach Tree Mound and Village Site* provides an example for this area in the first trend above. The University of Chicago under F. C. Cole continued work on the Kincaid site. Large scale excavations in the Tennessee area have continued under the University of Tennessee and TVA with WPA aid. Both Woodland and Mississippi sites were worked and local chronologies and interrelations traced. The University of Michigan, University of Minnesota, Ohio State Museum and University, Illinois State Museum, Indiana Historical Society, and other institutions have had expeditions in the field, many of them with WPA help. F. Hawley's *Three-Ring Analysis and Parting in the Mississippi Drainage* should provide the basis for accurate dating in this area. Master charts for pine, oak and hemlock are given for the various parts of the area along with a description of dendrochronological technique. The year 1536 is the earliest date reached in this area. J. A. Ford and G. R. Willey in an article in the *American Anthropologist* made a brilliant synthesis of all the work in the Eastern area to date, attempting to tie all the local chronologies together to make a chronological picture of cultural development and relations for the whole region.

The U. S. National Museum, The North Dakota Historical Society, and the University of South Dakota have all been at work in the Plains area, seeking to work out chronological and cultural relationships and to tie Plains archaeology to the historical ethnology of the region.

There has been considerable activity in the Southwestern field. F. C. Hibben published his paper on early man in New Mexico as evidenced by the remains in Sandia Cave. There is a good association with horse, bison, camel, mastodon and mammoth remains. These findings checked with similar discoveries in Manzano Cave. K. Bryan in his accompanying paper suggested a late Pleistocene date for these remains. E. B. Sayles and E. Antevs at Gila Pueblo in their *Cochise*

Culture describe a pre-pottery culture in southern New Mexico and Arizona said to be older than the Lindenmeyer site.

In the Anasazi area E. T. Hall, Jr., heading a field party for the Laboratory of Anthropology and Columbia University, dug an early site near Governador, New Mexico. The University of New Mexico under the direction of L. Spier continued work in Chaco Canon. F. de Layman at Bryn Mawr was working near Flagstaff. E. H. Morris of Carnegie Institution uncovered a Basket Maker II site near Durango, Colorado.

In the Mogollon area, P. Martin of the Field Museum continued work in the S U site in western New Mexico. Pithouses were uncovered. The site seems to be very early Mogollon in character and no connections with Hohokam or Anasazi cultures were apparent. The date is probably pre-500 A.D.

E. W. Haury's report on two seasons work in Forestdale workers in east central Arizona appeared this year. He reports oval and rectangular pithouses and suggests that the site is marginal Mogollon with Anasazi influence. Tree rings give dates of 600-800 A.D. This year Haury worked on a large Pueblo III site in Forestdale and started work on an important early site called the Bluff site.

Two reports by J. C. McGregor and H. S. Colton on the work done by the Museum of Northern Arizona at Wiona and Ridge River appeared. Pithouses, ball courts, and masonry pueblos were discovered in what appears to be a Hohokam-Mogollon blend.

In the Arctic region work on the Ipiutak culture on Point Hope, Alaska continued. Here, in 1940, F. G. Rainey at the University of Alaska and the American Museum of Natural History uncovered a town of 625 square houses arranged in five avenues. A preliminary report on this site by Rainey appeared in the *American Anthropologist*. J. L. Giddings at the University of Alaska is continuing his tree ring investigations on timbers from Point Hope.

CENTRAL AND SOUTH AMERICA

The Carnegie Institute, Division of Historic Research is continuing work in Yucatan and Guatemala. This season, A. V. Kidder will continue work at Kaminaljuyu, J. E. S. Thompson will be working in the west coast of Guatemala, and E. W. Andrews in Yucatan.

J. M. Longyear III at the Peabody Museum at Harvard has been working in Panama studying Chiriqui ceramics. A new Peabody Museum memoir by D. Store in *The Archaeology at the North Coast of Honduras* has appeared. S. Lothrop's *Pottery of Cocle* is in press.

The *Dirección de Monumentos Prehispánicos* of the Mexican Government has continued its work of excavation and reconstruction in sites too numerous to be listed here.

In G. C. Vaillant's *Aztecs of Mexico*, already mentioned in the section on ethnology, students of archaeology will find a most convenient summary of Vaillant's work on the early cultures in the Valley of Mexico, as well as a survey of the archaeology of later periods.

On South America this year there have been very few papers published, but there are a number of workers in the field. The Peruvian government has continued its archaeological work in several parts of Peru, especially, at Pachacamac. I. Goldmann of Columbia University excavated a large tomb and several burial sites in the Department of Cauca, Colombia. A report on this work is in preparation. The school of American Research and the Museum of New Mexico, with the University of Southern California and the National Academy of History at Quito, completed six months of excavations on the coast of Ecuador. The Institute of Andean Research has formulated a wide-spread plan of research sponsored by the Coördinator's Committee on Commercial and Cultural Relations between the Americas. Under this program, C. Osgood, B. I. Rouse, and G. Howard are working in Venezuela and the West Indies, W. C. Bennett and J. A. Ford in Colombia, W. D. Strong, G. Willey, and J. Bird

in the south Peruvian and north Chilean coast; A. V. Kidder, II, and J. Rowe in the southern Peruvian and Bolivian highlands, and S. K. Lathrop and M. T. Newman in Peru.

EUROPE

Archaeological news from Europe is very scanty. The Abbe Breuil discovered a remarkable group of Upper Paleolithic cave paintings in the Dordogne region of France. V. G. Childe dug a viking site that was discovered in a sand pit in Scotland. H. O'N. Henken of the Peabody Museum of Harvard made a brief report of the excavations in the Harvard expedition in Ireland in the *American Journal of Archaeology*. The Harvard Irish expedition's excavations of stone age sites are described by H. L. Movius in a book now in press. The book is divided into two parts. The first section is given over to a careful working out of chronological relations, and shows an impressive knowledge of, and skill at handling, geological data. The second section is devoted to archaeology, each site and the types of artifacts being described in detail. The thesis of the work is the fallacy of attempting to date Stone Age cultures on a typological basis; a reliable chronology must be established by the national sciences before tracing out the interrelations of culture.

NEAR EAST AND AFRICA

The State Historical Museum at Moscow and the Museum at Georgia have put out reports on previous work on an Azilic-Tardenoisian site in the southern Crimea and an archaeological survey of Armenia.

Two important works have come out on African archaeology, J. P. O'Brien's *The Prehistory of Uganda Protectorate* and F. R. Wulsin's *The Prehistoric Archaeology of Northwest Africa*.

In the Near East the Turkish Historical Society continues work at Alaca Huyuk. All other work in this area seems to have stopped. The Oriental Institute at the University of Chicago has put out several publica-

tions in this field this year and has several in preparation, among them one by D. E. McCown on *The Comparative Stratigraphy of Early Iran*.

PHYSICAL ANTHROPOLOGY

There were not many publications in this field this year though several of the archaeological reports mentioned above have short sections of skeleton material. W. M. Krogman at the University of Chicago published his *Bibliography of Human Morphology (1914-1939)*. This nearly exhaustive piece of work will be invaluable to workers in this field.

F. Weidenreich of the Cenozoic Research Laboratory of Peiping Union Medical College published "The Extremity Bones of *Sinanthropus Pekinensis*." This paper helps to make *Sinanthropus* one of the most thoroughly described fossil human types. F. Weidenreich also published a paper on "The Brain and Its Role in the Phylogenetic Transformation of

the Human Skull" in which he concludes the enlarging of the brain has been an orthogenic characteristic of the primate group as a whole.

In *Scientific Aspects of the Race Problem*, edited by A. Hrdlicka, R. H. Lowie and O. Klineberg, the three editors and H. S. Jennings and D. T. V. Moore attempt to define the present status of racial studies in a series of essays, representing genetic, psychological, anthropometrical, and cultural points of view. This book should be an answer to any who would make social discriminations on a basis of racial argument.

The large Irish series is being analyzed by E. A. Hooton of Harvard. D. L. Oliver's series from Melanesia and J. B. Birdsell's Australian series are also being analyzed there. H. L. Shapiro, at the American Museum of Natural History, has been at Point Hope, Alaska, to work with the skeleton material uncovered there by F. G. Rainey.

PERIODICAL PUBLICATIONS

American Anthropologist

American Anthropological Association, Menasha, Wis.

American Journal of Physical Anthropology

36th Street and Woodland Ave., Philadelphia.

American Journal of Psychiatry

9 Rockefeller Plaza, New York City.

American Journal of Psychology

Cornell University, Ithaca, N.Y.

American Journal of Sociology

5750 Ellis Ave., Chicago.

American Political Science Review

Menasha, Wis.

International Journal of Ethics

5750 Ellis Ave., Chicago.

Journal of Abnormal and Social Psychology

Ohio State University, Columbus, Ohio.

Journal of Comparative Psychology

Mount Royal and Guilford Aves., Baltimore, Md.

Journal of Educational Psychology

Mount Royal and Guilford Aves., Baltimore, Md.

Journal of Educational Sociology

32 Washington Place, New York City.

Journal of Experimental Psychology

Ohio State University, Columbus, Ohio.

Journal of General Psychology

Journal Press, Provincetown, Mass.

Journal of Philosophy

515 West 116th Street, New York City.

Journal of Social Psychology

Journal Press, Provincetown, Mass.

Mental Hygiene

1790 Broadway, New York City.

Philosophical Review

114 Fifth Ave., New York City.

Psychoanalytic Review

3617 Tenth Street N.W., Washington, D.C.

COGNATE SOCIETIES AND RESEARCH INSTITUTIONS

Psychological Review

Ohio State University, Columbus,
Ohio.

Social Research

66 West 12th Street, New York
City.

COGNATE SOCIETIES AND RESEARCH INSTITUTIONS

(For further information, the reader may address the following organizations)

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| AMERICAN ACADEMY OF POLITICAL AND SOCIAL SCIENCE, 3457 Walnut St., Philadelphia, Pa. | AMERICAN PSYCHOLOGICAL ASSN., Univ. of Minnesota, Minneapolis, Minn. |
| AMERICAN ANTHROPOLOGICAL ASSOCIATION, American Museum of Natural History, New York City. | AMERICAN PSYCOPATHOLOGICAL ASSN., 520 Commonwealth Ave., Boston, Mass. |
| AMERICAN ASSOCIATION OF PHYSICAL ANTHROPOLOGISTS, American Museum of Natural History, New York City. | AMERICAN SOCIETY FOR PSYCHICAL RESEARCH, 40 E. 34th St., New York City. |
| AMERICAN ETHNOLOGICAL SOCIETY, American Museum of Natural History, New York City. | AMERICAN SOCIOLOGICAL SOCIETY, University of Pittsburgh, Pittsburgh, Pa. |
| AMERICAN GENETIC ASSN., 308 Victor Bldg., Washington, D.C. | NATIONAL COMMITTEE FOR MENTAL HYGIENE, 50 W. 50th St., New York City. |
| AMERICAN PHILOSOPHICAL SOCIETY, 104 S. 5th St., Philadelphia, Pa. | NATIONAL INSTITUTE OF SOCIAL SCIENCES, 271 Madison Ave., New York City. |
| AMERICAN POLITICAL SCIENCE ASSN., 305 Harris Hall, Northwestern University, Evanston, Ill. | PSYCHOLOGICAL CORPORATION, 522 Fifth Ave., New York City. |
| AMERICAN PSYCHIATRIC ASSN., 2 E. 103rd St., New York City. | SOCIETY FOR AMERICAN ARCHAEOLOGY, 10 Frisbie St., Cambridge, Mass. |

PART SEVEN

THE HUMANITIES

DIVISION XXV

LITERATURE AND LANGUAGE

FICTION

BY PETER MONRO JACK
CRITIC AND LECTURER

BEST-SELLING NOVELS AND AWARDS

Two novels from 1940 continued to sell well: Hemingway's *For Whom The Bell Tolls*, which was awarded the Critics' Prize, and Kenneth Roberts' *Oliver Wiswell*. No prize for fiction was awarded in 1941 by the Pulitzer committee. The 1940 award was for John Steinbeck's *The Grapes of Wrath*. The best seller at the end of 1941 was Mary Ellen Chase's *Windswept* (Macmillan), her best story of Maine. The winner of the Latin American Prize was Ciro Alegria with his *Broad and Alien is the Land* (Farrar), a story of a Peruvian mountain village and its fight to preserve its independence against the predatory landowners.

THOMAS WOLFE

Thomas Wolfe's last novel was published, *The Hills Beyond* (Harper). It is the unfinished novel he was writing about his ancestors. Edward C. Aswell edited it, with an illuminating essay on Wolfe's method of work. There are also shorter pieces. Mr. Aswell says this will be the last of Wolfe's writings. The remaining manuscripts will be turned over to some library.

SCOTT FITZGERALD

Scott Fitzgerald, who died in December 1940, also has a posthumous

book, *The Last Tycoon* (Scribner's), edited by Edmund Wilson, an unfinished novel of Hollywood where Fitzgerald was living and writing, and it contains his best writing. Also included in the book are reprints of *The Great Gatsby* and several of the stories. There are notes on the unfinished novel, showing how carefully Fitzgerald worked.

KOESTLER AND OTHERS

Critics were undecided about the best written novel of 1941. Many believed it to be *Darkness at Noon* by Arthur Koestler (Macmillan), an extraordinarily dramatic story and interpretation of the Moscow trials. Koestler also wrote later *Scum of the Earth* (Macmillan), a memorable personal story of a concentration camp in France. Others receiving critical acclaim were *Storm* by George Stewart (Random House), a powerful story of a California typhoon, in a quite new, unique style. *Black Lamb and Gray Falcon* by Rebecca West (Viking), which could be included in fiction although it is a mosaic of travel and personal experiences in Yugoslavia by the brilliant English novelist, showing a wealth of erudition and imagination. *Delilah* by Marcus Goodrich (Farrar) is a story of an American warship in the South Seas during the first World War. It

was called "an extraordinarily lovely novel of a fighting ship."

A very popular novel was A. J. Cronin's *The Keys of the Kingdom* (Little, Brown) which got away from the war by telling the story of a Scottish idealistic missionary to China and the perseverance of his humility. Mazo de la Roche's 8th volume in the Jalna series is *Wakefield's Course* (Little, Brown).

WAR NOVELS

Others in an unusually good year for novels were (from England) James Hilton's *Random Harvest* (Little, Brown), the strange aftermath of an Englishman in the last war when "bombs fell at random," and his effort to recover. *This Above All* by Eric Knight (Harper) is of the present war and the psychology of a man who had survived Dunkirk. *The Sun Shall Greet Them* (Macmillan) by David Rame, the South African writer of *Wine of Good Hope*, who was wounded at Dunkirk. *Action Stations* by Bartimeus (Little, Brown) comprises stories of the Royal Navy in the present war. *Above Suspicion* by Helen MacInnes (Little, Brown), is a thriller with a background of European espionage in 1939, but with a sufficient sense of reality.

I. A. R. Wylie's new book *Strangers Are Coming* (Random House) is about Polish refugees arriving in New England. William McFee takes his sea-faring stories to the Connecticut hills in *Spenlove in Arcadia* (Random House). Charles Morgan's *The Empty Room* (Macmillan) is his shortest, of the spiritual dilemma in England today. Robert Greenwood writes of the average Englishman in wartime in *Mr. Bunting in Peace and War* (Bobbs-Merrill). Sir Hugh Walpole's posthumous novel is *The Blind Man's House* (Doubleday), the life of a man blinded in the war.

London Pride by Phyllis Bottome (Little, Brown) is possibly her finest work, the picture of a London family during the war. *Shelter* by Jane Nicholson (Viking) is also on the London scene and reads like a diary.

Day of the Trumpet is David Cornel DeJong's story of the last year in the life of free Holland (Harper). *A Yank in the R.A.F.* (Random House) by Harlan Thomas is the story of an American who flew a bomber to England for \$1,000 and stayed to fight at Dunkirk. *The Gulls Fly England* by Sylvia Thompson (Little, Brown) has a background chronicle of wartime England, Paris, Boston, New York, New England, French Riviera, Italy, a delicate story against violence.

POPULAR FICTION

Miscellaneous novels that had some importance were Storm Jameson's *Cousin Honore* (Macmillan), of the indestructibility of the European way of life; Phyllis Bentley's *Manhold*, the concluding story of her Yorkshire history in fiction form (Macmillan); *Home is Here* by Sidney Meller (Macmillan) of immigrant life in San Francisco; *All of Their Lives* by Myron Brinig (Farrar), the story of two girls in Minnesota; *All That Glitters* by Frances Parkinson Keyes (Messner), a popular novel of modern Washington; *Summer Never Ends* by Waldo Frank (Duell), a love story with a moral for moderns; *"Don't, Mr. Disraeli"* by Caryl Brahms and S. J. Simon (Putnams), the funniest novel of the year, a travesty of Victorian fiction with a mixture of real and fictional characters; Somerset Maugham's new novel *Up At The Villa* (Doubleday), a short, well mannered story of an Italian village, equally ironic and terrible.

HISTORICAL AND REGIONAL

Despite the numerous war novels there have been as many historical and regional novels as ever. Leading the field in popularity as a period piece is Edna Ferber's *Saratoga Trunk* (Doubleday) in her best flamboyant style, designed for the theatre and the movies. Marguerite Steen in *The Sun Is My Undoing* (Viking), a novel longer even than *Gone With the Wind*, writes of the slave trade from Africa to Cuba. *Botany Bay* is a story of the settlement of Australia by Charles Nordhoff and James

Norman Hall (Little, Brown), and Eleanor Dark's *The Timeless Land* (Macmillan) is a long and sound novel of the same historical period. John Masefield goes back to the time of Justinian in *Conquer* (Macmillan).

Miscellaneous historical novels include *King's Masque* (Dutton) by Evan John, a romance of Marie Antoinette; *Owen Glendower* (Simon, Schuster) by John Cowper Powys. Wales in the 15th century; *The Harp and the Blade* (Dutton) by John Myers, Europe of the period following Charlemagne's death; *The Hill of Doves* (Houghton Mifflin) by Stuart Cloete, of the Boer War.

AMERICAN HISTORICAL FICTION

Caroline Gordon's *Green Centuries*, a superior book, is of the Southern frontier in American Revolutionary days (Scribner's). *One Red Rose Forever* by Mildred Jordan is a first novel of Colonial days, of the glassware "baron" who made and lost a fortune in Pennsylvania (Knopf). C. S. Forester's *The Captain From Connecticut* is a good yarn of American sea fighters in the War of 1812 (Little, Brown). Ralph Beebe also writes of 1812 in *Who Fought and Bled* (Coward). *Captain Paul* by Commander Elsberg is an exciting adventure story of the exploits of John Paul Jones (Dodd, Mead). In *The Copperheads*, William Blake writes a long and thorough novel of the period 1860-1865 (Dial). Louis Bromfield turns to New Orleans during the Civil War for his *Wide Is the River* (Harper). Ben Ames Williams has written his best book in *The Strange Woman*, about the Civil War, a mixture of history and psychology (Houghton). *Pillars of Gold* is a story of the Colorado River during the Civil War by Lucille Selk Edger-ton (Knopf).

Proceed, Sergeant Lamb (Random House) is a continuation by Robert Graves of his *Sergeant Lamb's America*, the story of a British soldier who fought in the loyalist forces during the Revolution and actually existed, leaving behind him a journal. It is interesting to see how well Graves has

understood his period since it closely tallies with Carl Van Doren's then unpublished *The Secret History of the American Revolution* and has been reinforced by a letter in Lamb's writing from the Clements Library at Michigan. *Neutral Ground* by Frank O. Hough is a new view of the Revolution through those people who, as helpless householders, lived in no man's land between the British and American lines (Lippincott).

East by Day (Farrar) by Blair Niles is a story of the mutiny of the slaves aboard the *Armistad*, led by Cinque, and of the ship's crazy voyage and international repercussions in the matter of abolition. Hilton Head writes in *Josephine Pinckney* of the 17th century, from London to the Barbadoes with an expedition to Carolina (Farrar). *Let My People Go* by Henrietta Buckmaster is a dramatic story of the underground railroad and the abolitionist movement (Harper). *Tory Oath* (Doubleday) by Tim Plidgen goes back to the Revolution, to the little-known story of Flora Macdonald and the Scottish clansmen who exiled themselves to North Carolina and were in the ambiguous position of loyalist refugees.

Further American historical novels are *Not Without Peril* (Putnam's) by Marguerite Allis, of the earliest settler in Vermont, through the actual story of Jemima Sartwell. *West of the River* (Crowell) by Dorothy Gardiner is an adventure story of the colonizing emigrants west of the Missouri river and north of the Santa Fe trail. *They Came to a River* (Macmillan) by Allis McKay tells of the development of the Columbia River Valley, the people who came there, the fruit-growing region, in a large canvas. *City of Illusion* (Harper) by Vardis Fisher is the story of Virginia City during the gold rush with verifiable source material. A regional story is Wessel Smitter's *Another Morning* (Harper) of the government resettlement project in Alaska. Carl Carmer, of *Stars Fell on Alabama*, etc., publishes his first novel of New York State, in *Genesee Valley* (Farrar).

AMERICAN REGIONAL

Other regional novels are *Thomas-Thomas-Ansil-Thomas* (Macmillan) by Robert P. Tristram Coffin, the story of many men of one family from the Thomas Coombs who left Devon in 1650 to come to Maine through the Thomas Coombs who was a Sergeant in the A.E.F.; *Black Bayou* by Idwal Jones (Duell), of plantation life in the Mississippi delta; *Mr. George's Joint* (Dutton) by Elizabeth Lee Wheaton, a first book, won the first Thomas Jefferson Southern Award, about negroes in a Texas seaport; *First, The Fields* by Charles Wood (N.C.U. Press), a first novel, of a Southern tobacco plantation and the failure of the tobacco growers' cooperative movement; Phil Stong's *The Princess* (Farrar), again his familiar background of Iowa, this time of dirt farmers; John Steinbeck's *The Forgotten Village* (Viking), life in a Mexican village from a movie written in collaboration; *Always the Land* by Paul Engle, the poet's first novel (Random House), of the Iowa soil; *Swamp Water* by Vereen Bell (Little, Brown) a melodrama of the Georgia swamps; *Evening in Spring* (Scribner's) by August Derleth, going back again to his Wisconsin childhood. *Men Working* (Harcourt) by John Faulkner, a first novel by the brother of William, about share-croppers in the south.

WOMEN NOVELISTS

Virginia Woolf's last novel, which she was revising before her suicide, is *Between the Acts* (Harcourt), the tale of a day in 1939 by the foremost woman writer of her time. Her house in Bloomsbury was demolished, and she felt she could no longer live. In *This Our Life* (Harcourt), Ellen Glasgow's latest novel, is Queensboro, Virginia again, by one who has never accepted defeat, even in tragedy. A first novel that won the Avery Hopwood prize and received some praise is *Whistle Stop* (Random House) by Marita M. Wolff, a rather synthetic story of a raffish family in a small Michigan town. *Satan's Sergeants* (Scribner's) by Josephine Herbst re-

laxes her social criticism and is a pleasant story of characters in Bucks County, Pa. *Tadpole* (Macmillan) by Helen Ashton is a story of how it feels when your neighbours in England suspect you to be a spy. *Not By Strange Gods* (Viking), short stories by the late great stylist, Elizabeth Madox Roberts. *The Land of Spices* (Doubleday) by Kate O'Brien is a sensitive interpretation of a character in a nunnery.

MARQUAND, PROKOSCH, SINCLAIR

Two distinguished novels were *H. M. Pulham Esq.* (Little, Brown) by John P. Marquand, generally felt to be his best in the series of his satiric portraits of New England characters, and *The Skies of Europe* (Harper) by the younger man Frederic Prokosch, a novel of great style and imagination of Europe before the war. Upton Sinclair continues his story of our time with *Between Two Worlds* (Viking), the background of Europe 1914-1929.

REALISM

One of the cleverest of first novels was Budd Schulberg's *What Makes Sammy Run* (Random House), a merciless and vivid exposure of a Hollywood producer in the tough style. Jerome Weidman's *I'll Never Go There Any More* (Simon, Schuster) is a realistic drab story of vicious characters. *Send Me Down* (Knopf) by Harry Steig is a complete novel of the fantastic world of jazz and swing.

VARIOUS TALES

Julian Green, the American who writes in French and has his novels translated, writes a subtle and tragic story of dream and physical reality in *Then Shall The Dust Return* (Harper). Robert Nathan writes of refugee children in the realistic *They Went On Together* (Knopf). Nathan also wrote in his more familiar vein *Tapiola's Brave Regiment*, a light fantasy continuing his story of a Yorkshire terrier (Knopf). Booth Tarkington's *The Fighting Littles*

(Doubleday) is another story of Penrod-like characters. *The Heritage of Hatcher Ide* (Doubleday) by the same writer is a Middle West story of youth *versus* the depression. John Erskine writes a portrait of an inexplorable woman whom a novelist meets on a lecture tour in *Mrs. Dorat* (Stokes). Gertrude Stein's novel *Ida* (Random House), of an American woman living in a foreign country, was said to be a picture of a well-known duchess.

John Buchan's last novel, *Mountain Meadow* (Houghton Mifflin), of arctic Canada, in a sense parallels his (Lord Tweedsmuir's) last years. Michael Sadleir in *Fanny By Gaslight* (Appleton) does a Victorian piece of London's Leicester Square. *My Friend Flicka* (Lippincott) by Mary O'Hara, is a popular story of animals and children that reminded readers of *The Yearling*. A first novel praised for its genuine quality by Louis Bromfield and others was *Dawn Breaks the Heart* (Howell) by William Davey, an autobiographical story. Eleanor Painte writes of the romantic story of Schumann and Clara Wieck in *Spring Symphony* (Harper). P. G. Wodehouse had a book ready before his German experience in broadcasting called *Quick Service* (Doubleday).

EMIGRÉ AUTHORS

"Never" wrote J. Donald Adams, the *Times Book Review* editor, "in the history of the novel has the novelist who tries to write honestly about the world he lives in been confronted by a situation which equals that of today." Storm Jameson adds: "He must know, that is, feel so much and on so many levels." That is true, not only of English and American novelists, but more so of the increasing number of emigré authors whose novels have been written out of agony. Koestler's work has been mentioned as likely the best. Many are so much a mixture of fact and fictionalized form that it is difficult to place them. *A Thousand Shall Fall* (Harcourt) by Hans Habe is by an Austrian novelist and jour-

nalist who served with the French army and then was placed in a concentration camp. *The Coward Heart* (Knopf) by "Anna Reiner," pseudonym of a Nazi refugee, is a tale of torture in a concentration camp and the breakdown of a fine character. *Dust of Our Brothers' Blood* (White Eagle Press) by Jono Knopka is about the Polish war from which the writer escaped. *Spring 1940* (Doubleday) by Stuart David Engstrand is a story of Norway and the Nazi treacherous penetration.

Salt of the Earth (Sheridan) is translated from the Polish of Joseph Wittlin, first of a trilogy that won the Polish Academy Prize, by a refugee now in this country. *Victory Was Slain* (Alliance) is Hilda Abel's novel of the fall of Vienna. *Flotsam* (Little, Brown), translated from the German, is Erich Remarque's story of the life of refugees in the 1930 decade, without passports, civil rights, habitation, haunting the borders of Czecho-Slovakia, Austria, Switzerland, France. In *To Sing With The Angels* (Doubleday) Maurice Hindus writes of the Nazis in Czecho-Slovakia from Munich to the Storm Troopers and Gestapo.

TRANSLATIONS

Other translations of notable books were, from the French: *Aftermath* (Knopf) by Jules Romains, the 1919-1920 period in his series *Men of Good Will*; *The Transposed Heads* (Knopf) by Thomas Mann, a short symbolic piece on a Hindu legend, based on the transposition of two different kinds of lives, bodies and intuitions; the one into the other; *The World of the Thibaults* (Viking) by Roger Martin du Gard, a further translation of the Nobel Prize winner's huge work in French realism; *The Century Was Young* (Duell) by Louis Aragon, the third novel in "The Real World" of the French bourgeoisie rebelling against itself.

Amerika (New Directions) by Franz Kafka is an imaginary novel about America by the late Prague writer who had never seen America, but took it for a symbolic freedom,

from the German. From the Russian, the most important novel was *The Silent Don* (Knopf) which contained the two novels, the *Don Flows Home to the Sea* and *And Quiet Flows the Don* by Mikhail Sholokhov, a great story in the tradition of Tolstoy of the Don Cossacks. *The Earth Is Ours* (Simon, Schuster), translated from the Swedish of Vilhelm Moberg, is a trilogy of village life, Europe on the verge of war. *The Good Shepherd* (Bobbs-Merrill) is Gunnar Gunnarsson's pastoral story, translated from the Danish.

CHINESE SCENE

From or about China came three novels: *Destiny Has Eight Eyes* (Harper) by Willard A. Hanna, a novel of China during the first months of the war by an American teacher in Chinese colleges; *Today and Forever* (Day) by Pearl Buck, stories of China, its recent past, its heroic effort; *A Leaf in the Storm* (Day) by Lin Yutang, a novel of China in the current war.

SHORT STORIES

The O. Henry Prize Stories, edited this year by Herschel Brickell (Doubleday), gave the prize to Kay Boyle, and others represented are Eudora Welty, James Still, and Albert Maltz. *A Curtain of Green* (Doubleday) by Eudora Welty is mostly about Mississippi by an uncommonly good writer, with an introduction by Katherine Anne Porter. *Three Companion Pieces* (Little, Brown) by Marjorie Sharp contains three charming love stories. *The Wilsons* (Coward) by Christopher La Farge is an inte-

grated series of short stories about society in Rhode Island.

Hotel Splendide by Ludwlg Bemelmans contains short stories of waiters and guests, half humorous, half serious in an expensive New York hotel. *Men of the Mountains* (Dutton) by Jesse Stuart is a series of Kentucky characterizations. Elizabeth Bowen, the English stylist, writes 18 stories in *Look at All Those Roses* (Knopf). *The Golden Skylark* (Coward) by Elizabeth Goudé has some good writing from magazine publications. *England Is My Village* (Reynal) by John Llewellyn Rhys has stories written before the war by an airman killed in 1940. *Open the Door!* (Smith, Durrell) by Osbert Sitwell, is made up of period pieces of England and the Continent before the war. *My Name Is Aram* (Harcourt) by William Saroyan presents stories and anecdotes of Saroyan's youth in California. *Come Wind, Come Weather* (Doubleday) by Daphne du Maurier comprises ten stories, true enough, of war in Britain, Finland, Latvia.

My Dear Bella (Random House) by Arthur Kober has further stories from the *New Yorker* about this famous Bronx family. The stories (Little, Brown) collected from the *Saturday Evening Post* for 1940 include those by Stephen Vincent Benét, Joel Sayre, Gladys Hasty Carroll, Stuart Cloete. *Junior Miss* (Random House) by Sally Benson contains *New Yorker* stories which were turned into a successful play in New York, about the adventures of a girl of 12 in growing up.

POETRY

BY PETER MONRO JACK
LECTURER AND CRITIC

THE TIMES POETRY PAGE

There was no outstanding poet of the year, but a great deal of poetry was published and *The New York Times Book Review* recognized this by inaugurating a special weekly page for the reviewing and pre-viewing of

poetry. It is a controversial page, as it should be.

POET OF THE MONTH SERIES

James Laughlin, Jr., of the New Directions Press of Norfolk, Conn., in his series called "The Poet of the

Month," printed by the best presses in the country and selling very cheaply, shows what has come out of America during the year. No. I is William Carlos Williams' *The Broken Span*, brief, realistic notations of experience in the imagistic tradition, though more personal and intimate. In No. II, the editor makes a selection from John Donne, the 17th century individualist whose style and intensity of feeling have influenced so many contemporary poets. No. III is a young American poet, Harry Brown, who writes of the contemporary scene in *The End of a Decade*. He has also written a long poem called *The Poem of Bunker Hill*, in a fine heroic manner.

Howard Baker's *A Letter From the Country*, also on the contemporary scene, with poems on the moral and social and personal meaning of war, written with a scholar's taste, is No. IV. No. V is a first book, like many of the others, by Theodore Spencer, *The Paradox in the Circle*. It is designed to be read aloud, and there are gramophone recordings available. It expresses a kind of New England Emersonian philosophical speculation in a personal idiom and a new rhythm, by a poet who is also a scholar and a philosopher. No. VI is a selection of the poems of the late John Wheelwright, caustic and astringent New England wit, whose poetry should have been better known for its subtle directness of expression.

A group of poems by Josephine Miles, rather light verse on the whole, rather pretty and witty, is No. VII. No. VIII is a verse play by the talented Delmore Schwartz, called *Shenandoah*, about the birth of a Jewish child and how the child will be named, very original in theme and structure. No. IX is a number of translations by Dudley Pitts from the Greek, called *More Poems From the Palatine Anthology*, by a very good translator. No. X is the selected poems from the work of F. T. Prince. No. XI is a translation by Babette Deutsch of some of Rainer Maria Rilke's early religious poems from *The Book of Hours* (*Das Stun-*

denbuch), written around 1900. Rilke was probably the greatest modern German poet, and Miss Deutsch, who is a good poet and critic herself, makes a fine translation. Perhaps it is the best poetry of the year that one can read. No. XII is *The Dry Season* of Malcolm Cowley, good poetry by a man who has given most of his time to social criticism and editorial duties on the *New Republic*.

THE DECKER PRESS

Another press that prints beautiful books and occasionally fine poetry is the James Decker Press of Prairie City, Ill. It has printed the poetry of Parker Tyler (*The Metaphor in the Jungle*) and Charles Henri Ford (*ABC's*), two poets who remind one of the surrealist approach to life, i.e. not realistic, not idealistic, but beyond and different from either. The Decker Press has an anthology of new poets including Tom Boggs, Marshall Schacht, John Ciardi, Minna Gellert, Robert Clairmont, E. L. Mayo, Lucy Kent. It is the first of an annual series. *We Thank You All the Time* is by Norman Macleod and is notable for its poems about Santo Domingo Indians; a very intelligent book.

YALE YOUNGER POETS

The third press that undertakes to see that poetry gets published is the Yale University Press. The series of younger poets' verses is introduced by Stephen Vincent Benét. The 1940 choice was Norman Rosten's *Return Again, Traveller*, a patriotic poem that depended too much on the reader's patriotism, rather than on his poetic sense. The 1941 choice was *The Metaphysical Sword* by Jeremy Ingalls, a scholarly piece of poetry.

MILLAY AND OTHERS

The Collected Sonnets of Edna St. Vincent Millay were published by Harper. Paul Engle's new volume is *West of Midnight* (Random House), showing a new intensity in his return to American life and beginning a series of love poems. The prize poem

awarded by *Poetry Magazine*, "America: 1941," is included. *The Song of Jed Smith* (Macmillan) completes John G. Neihardt's *Cycle of the West* (1822-1890). Here it is the story of the first exploration of the route from the Missouri River to the Pacific Ocean. *Vermont Chapbook* is published by the Middlebury College Press and contains some traditional folk-ballads. The same press published Cedric Whitman's *Orpheus and the Moon Craters*. Edgar Lee Masters in his *Illinois Poems* returns to the scene of his *Spoon River* but writes of it now affectionately, of the places, even of the people that he had remembered (James Decker Press).

The Shelley Memorial Award was given to Marianne Craig Moore by the Poetry Society of America. Her new book, *What Are The Years*, shows how she has developed a new language in poetry to describe her sense of life. It is clear, realistic, factual about small things, and in sum it makes one of the best books of the year. Louise Bogan's *Poems and New Poems* (Scribner's) comes from an excellent, fastidious writer, influenced by the metaphysicals. *The Complete Poems of Emily Brontë* have been edited by C. W. Hatfield from the manuscripts (Columbia) many of which were acquired from the papers of the Rev. Arthur Nicholls who married Charlotte Brontë and survived her upward of half a century.

In established American poetry E. E. Cummings's *50 Poems* (Duell) was a volume to be praised for its integrity to a personal feeling. Kenneth Fearing's *Collected Poems* (Random House) is on the whole poetry of social satire and seriousness with an idiom of its own. The *Selected Poems of John Peale Bishop* show a poet of wit, scholarship, and a respect for the tradition of poetry (Scribner's). David Morton's *Angle of Earth and Sky* (Macmillan) is simple and graceful lyricism. Mark Van Doren writes in *The Mayfield Deer* (Holt) a long narrative poem of the tragic hunt for a tame deer, a poem that has symbolic implications.

ANTHOLOGIES

Calendar is an anthology of the year's poetry from the Decker Press. The longest poem is by Louis Zukofsky who has also published *55 Poems* by the same press. *Reading Poems* (Oxford) is edited by Wright Thomas and Stuart Gerry Brown and is called an introduction to critical study. An *Anthology of Pulitzer Prize Poems, 1922-1941* (Random House) is compiled by Marjorie Barrows, Frost, Benét, MacLeish, Millay, Lowell, etc. An anthology edited by Oscar Williams is called *New Poems: 1940* (Yardstick) and contains work by Gregory, MacLeish, Jeffers, Prokosch, Auden, Frankenberg, Spencer, Stevens, Zaturenska, and others. An anthology that is likely to be standard for some time to come is Richard Aldington's *Viking Book of Poetry of the English-Speaking World* (Viking) with a long introduction and a more varied and fresher selection of poetry than previous anthologies.

ENGLISH POETS

The *Collected Poems* by Walter de la Mare are published by Holt. *Guatama The Enlightened, and Other Poems* (Macmillan) is John Masefield's new book. Laurence Binyon has published *The North Star and Other Poems* (Macmillan). George Barker, a younger English poet, has put together the best of his verse in *Selected Poems* (Macmillan). *Another England* (Duell) is a first book of poems by Dilys Bennet Laing who feels strongly and at times bitterly about the present world. Alfred Noyes writes of the time of war in *Shadows on the Down and Other Poems* (Stokes). *The Alert* by Wilfred Gibson is a group of poems about this war comparable with the poems he had written during the last war (Oxford). Edmund Blunden, an English poet of nature and contemplation, collects his recent poems in *Poems 1930-1940* (Macmillan). Louis MacNeice collects his poems from 1925 to 1940 (Random House).

NEW VERSE

The League to Support Poetry is a praiseworthy organization whose lat-

est book is Ted Olsen's *Hawk's Way*, poems that have a legendary and mythical air. *Plain-Chant for American Songs and Ballads* (Harper) by Katherine Garrison Chapin is a volume of poems of American history, incidents, landscapes. Winfield Townley Scott's *Wind the Clock* (Decker) is an unusual series of impressions that show an original poet. *Boy at Dusk* by Ralph Friedrich from the Fine Editions Club shows talent in lyric verse. *And If I Cry Release* (Doubleday) by Sarah-Elizabeth Rodger is mainly of nature. Dorothy Dow's *Time and Love* (Liveright) is a clever, nimble kind of verse.

In *Ritual For Myself* (Macmillan) Anderson Scruggs writes agreeably of his acquaintance with nature. *Dawn in Snow* (Dutton) by Louise Townsend Nichol are personal lyrics of a delicate charm. *A Woman Wrapped in Silence* (Macmillan) by John W. Lynch is Father Lynch's version of the life of the Virgin Mary in a long narrative poem. *I Sing America* (Day) is a "Pageant of the Regions" by Clara Lambert. A first and good book is Anna Maria Arni's *Poems* (Random House), showing a wide range of interest and with excellent translations from Petrarch and others, by an Italian who has been ten years in this country. Josiah Titzell's *Galant Show* (Doubleday) is mostly occasional verse.

The *Poems* of John Finley, late editor-in-chief of *The New York Times*, have been edited with an introduction by John Finley, Jr. and they read very well (Scribner's). *The Airmen* (Random House) by Selden

Rodman is a long poetic chronicle of man's conquest of the air. It begins with Icarus and ends with the Wright brothers. Mr. Rodman also edited *The Poetry of Flight* (Duell), a fine anthology in poetry and prose of what has been written about aviation. *Against the Cold* (Knopf) is Witter Bynner's newest book, pastoral, lyrical, sometimes sceptical, with many sonnets, and mainly on the theme of fortitude.

GREGORY AND TORRENCE

Horace Gregory has selected his poems from 1930 to 1940, showing his development through *Chelsea Rooming House*, *No Retreat*, *Chorus For Survival*, and *New Poems* (Harcourt). They are serious, contemporary, inquiring poems, belonging with the best of his generation. Ridgely Torrence has made a selection of his best work in *Poems* (Macmillan), with new additions. Marya Zaturenska's *Listening Landscape* (Macmillan) by the Pulitzer Prize winner, the wife of Horace Gregory, has written her best work to date, a combination of classical and original poetry.

LIGHT VERSE

Some light verse includes Margaret Fishback's *Time For A Quick One* (Harcourt), *Poems For Penguins* (Dutton) by Laurence McKinney, *Garden Clubs and Spades* (Greenburg) by Joseph S. Newman, *A Pocket Full of Rye* (Duell) by Phyllis McGinley, and *Siren Song* (Doubleday) by the English parliamentarian A. P. Herbert, which has a serious background.

HISTORY

BY RICHARD W. LEOPOLD

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GENERAL

The year 1941, as the last year of official peace, in the United States witnessed no significant change in American historiography. The European conflict continued to challenge

some historians to study the events leading to the present crisis, but the best writings did no more than analyze the results of past wars. Several sessions of the meeting of the American Historical Association were

devoted to "War and Society." The papers there read have been printed in J. D. Clarkson and T. C. Cochran (eds.), *War as a Social Institution* (Columbia).

The normal outpouring of historical studies on varied themes persisted in 1941. No one type of history was dominant. No single work in American history, large or small, merits special attention for profound significance or widespread influence. As in preceding years, many of the most important contributions to history were made in the field of biography.

BACKGROUND OF THE WAR

Historians in 1941 continued to touch but lightly on the recent past. The most extensively read accounts of the 20-year truce were those by newspaper correspondents, radio commentators, and world travelers. Nevertheless, a few sound historical works dealt with this country's experience in the first World War and the period since. Outstanding is P. Birdsall, *Versailles Twenty Years After* (Reynal & Hitchcock), a convincing defense of Wilson and the much abused Versailles Treaty. New material on the Peace Conference is supplied in A. Luckau, *The German Delegation at the Paris Peace Conference* (Columbia), and in A. Van der Slice, *International Labor: Diplomacy and Peace, 1914-1919* (Pennsylvania). Other aspects of these years are described in J. M. Read, *Atrocity Propaganda, 1914-1919* (Yale); J. R. Mock, *Censorship, 1917* (Princeton); B. M. Baruch, *American Industry in the War* (Prentice-Hall); and W. C. Mullenbore, *History of the United States Food Administration, 1917-1919* (Stanford). M. E. Burton, *The Assembly of the League of Nations* (Chicago), adds to our knowledge of that organization. Sufficiently historical to be of value for the present conflict are B. Brodie's *Sea Power in the Machine Age* (Princeton); C. A. Buss' *War and Diplomacy in Eastern Asia* (Macmillan); W. C. Johnstone's *The United States and Japan's New Order* (Oxford); F. L. Schuman's *Night Over Europe* (Knopf); and Forrest

Davis' *The Atlantic System* (Reynal & Hitchcock). P. Herring, *The Impact of War* (Farrar & Rhinehart), discusses the effect, past and present, of war upon American political and economic institutions.

HISTORIES OF GENERAL SCOPE

General histories of limited periods were few in number. F. J. Klingberg's *The Morning of America* (Appleton-Century) surveys in readable style the years from 1763 to 1829. G. F. Milton's *Conflict* (Coward-McCann) contains a lively and concise account of the Civil War. Interesting but unbalanced is D. T. Lynch's *The Wild Seventies* (Appleton-Century). The complicated story of the twentieth century is adequately handled by H. B. Parkes, *Recent America* (Crowell).

THE REVOLUTIONARY PERIOD

The Colonial period was singularly neglected in 1941, but three outstanding contributions were made to the era of the Revolution. E. C. Burnett's *The Continental Congress* (Macmillan) is a solid, scholarly work of prime importance. Benedict Arnold and other sinister figures receive full treatment from hitherto untapped sources in Carl Van Doren's *The Secret History of the American Revolution* (Viking). Equally significant, though perhaps less definitive, is P. G. Davidson's *Propaganda and the American Revolution, 1763-1783* (North Carolina). Useful monographs are W. A. Brown's *Empire or Independence: a Study in the Failure of Reconciliation, 1774-1783* (Louisiana State); J. P. Boyd's *Anglo-American Union: Joseph Galloway's Plans to Preserve the British Empire, 1774-1788* (Pennsylvania); F. F. Van de Water's *The Reluctant Republic* (Day), Vermont, 1724-1791; and C. G. Singer's *South Carolina in the Confederation* (published by the author).

POLITICAL HISTORY

The Civil War period was the subject of several political histories in 1941. M. Leech's *Reveille in Washington* (Harper) is a brilliant sketch, based on familiar sources, of wartime

Washington. Worthwhile monographs are P. S. Foner's *Business & Slavery: the New York Merchants & the Irrepressible Conflict* (North Carolina); J. S. Tilley's *Lincoln Takes Command* (North Carolina), a reworking of the Fort Sumter problem; T. H. Williams' *Lincoln and the Radicals* (Wisconsin); J. R. Lane's *A Political History of Connecticut during the Civil War* (Catholic). Political developments in other periods are considered in A. T. Mason, *Bureaucracy Convicts Itself* (Viking), an account of the Ballinger-Pinchot controversy; W. A. Flint, *The Progressive Movement in Vermont* (Washington: American Council on Public Affairs); Eugene Lyons, *The Red Decade* (Bobbs-Merrill), the growth of Stalinist influence in the 1930's; H. T. Kane, *Louisiana Hayride* (Morrow), the rise and fall of Huey Long's dictatorship.

SOCIAL AND INTELLECTUAL HISTORY

The outstanding contribution of the year to this expanding field was F. O. Matthiessen's *American Renaissance* (Oxford). This stimulating essay in literary criticism on historical principles throws a flood of new light on the writings of Emerson, Thoreau, Hawthorne, Melville, and Whitman, as well as on mid-century America's concept of democracy. Equally ambitious, but much less successful, is O. Cargill's *Intellectual America* (Macmillan), which stresses recent trends in American thought.

F. L. Mott's *American Journalism* (Macmillan) is a splendid survey from 1690-1940, a worthy companion to the author's monumental study of American magazines. A. L. Demaree, *The American Agricultural Press, 1819-1860* (Columbia), and C. L. Cannon, *American Book Collectors and Collecting* (Wilson), suggest possibilities in the field of publishing. Different phases of American religion are portrayed in T. Maynard's *The Story of American Catholicism* (Macmillan); L. P. Qualben's *The Lutheran Church in Colonial America* (Nelson); G. C. Baker, Jr.'s *Introduction*

to the History of Early New England Methodism, 1789-1839 (Duke); E. K. Nottingham's *Methodism and the Frontier: Indiana Proving Ground* (Columbia); M. F. Melcher's *The Shaker Adventure* (Princeton); D. D. Williams' *The Andover Liberals* (N. Y.: King's Crown Press); S. Eddy's *The Kingdom of God and the American Dream* (Harper).

Developments in education are discussed in H. K. Beale's *A History of Freedom of Teaching in American Schools* (Scribner); C. F. Reid's *Education in the Territories and Outlying Possessions of the United States* (Columbia); and M. L. Fell's *The Foundations of Nativism in American Textbooks, 1783-1860* (Catholic). O. Handlin's *Boston's Immigrants, 1790-1865* (Harvard) is a solid work that touches on many phases of social history. T. W. Clarke, *Emigrés in the Wilderness* (Macmillan), tells of French Royalists in New York and Pennsylvania. V. F. Calverton, *Where Angels Fear to Tread* (Bobbs-Merrill), describes the unending quest in the United States for Utopia. A brilliant picture of the Underground railroad is contained in H. Buchmaster's *Let My People Go* (Harper).

Miscellaneous social themes are treated in D. Wecter's *The Hero in America: a Chronicle of Hero Worship* (Scribner); H. Haycraft's *Murder for Pleasure: the Life and Times of the Detective Story* (Appleton-Century); A. Train, Jr.'s *The Story of Everyday Things* (Harper); W. C. Langdon's *Everyday Things in American Life, 1776-1876* (Scribner); P. Reniers' *The Springs of Virginia* (North Carolina), and R. Barrett's *Good Old Summer Days* (Appleton-Century), two social histories of summer and health resorts; O. Pilat and J. Ranson, *Sodom by the Sea: an Affectionate History of Coney Island* (Doubleday, Doran); L. C. Rosten's *Hollywood: the Movie Colony and the Movie Makers* (Harcourt, Brace); W. F. Sprague's *Women and the West: a Social History of Women in the Trans-Allegheny Region* (Boston: Christopher); J. T. Howard's *Our Contemporary Composers* (Crowell);

and H. Saint-Gaudens' *The American Artist and His Times* (Dodd, Mead).

DIPLOMATIC HISTORY

D. Perkins' *Hands Off: a History of the Monroe Doctrine* (Little, Brown), was one of the most important books of the year both for its readable scholarship and for its timely analysis of the place of our historic policy in the present crisis. A. P. Whitaker's *The United States and the Independence of Latin America* (Johns Hopkins) is an able interpretation of a controversial subject. Continued interest in our northern neighbor is reflected in A. B. Corey's *The Crisis of 1830-1842 in Canadian-American Relations* (Yale). Other monographs of the year include: J. I. Brookes, *International Rivalry in the Pacific Islands, 1800-1875* (California); R. W. Logan, *Diplomatic Relations of the United States with Haiti, 1776-1891* (North Carolina); R. A. McLemore, *Franco-American Diplomatic Relations, 1816-1836* (Louisiana State); J. W. Schmitz, *Texan Statecraft, 1836-1845* (San Antonio: Naylor Co.). A slight venture into an unworked field is T. C. Smith's *The United States as a Factor in World History* (Holt).

CONSTITUTIONAL HISTORY

A revised edition of Z. Chafee, Jr.'s *Free Speech in the United States* (Harvard) contains new material for the years since 1920. R. H. Jackson's *The Struggle for Judicial Supremacy* (Knopf) is an informing but not impartial account of the Supreme Court controversy of 1937. A useful historical survey is B. M. Rich's *The President and Civil Disorder* (Brookings).

ECONOMIC HISTORY

Interest in economic and business history continued during the year. Individual industries are treated in A. H. Cole and H. F. Williamson, *The American Carpet Manufacture* (Harvard); E. D. Kennedy, *The Automobile Industry* (Reynal & Hitchcock); J. G. B. Hutchins, *The American Maritime Industries and Public Policy, 1789-1914* (Harvard); H. Knowlton, *Air Transportation in the United*

States (Chicago). Different aspects of transportation are recorded in L. D. Baldwin, *The Keelboat Age on the Western Waters* (Pittsburgh); J. A. Miller, *Fares, Please! From Horse-Cars to Streamliners* (Appleton-Century), an entertaining story of urban transit; and G. H. Kneiss, *Bonanza Railroads* (Stanford), the part played by five lines in California and Nevada during the mining boom. R. A. Foulke, *The Sinews of American Commerce* (N. Y.: Dun & Bradstreet), describes early credit facilities. E. C. Miller, *Oil Mania* (Dorrance), depicts the opening of the Pennsylvania fields. L. C. Kercher, V. W. Kebker, and W. C. Leland, *Consumers' Cooperatives in the North Central States* (Minnesota) is a useful study. The problem of migratory workers is analyzed in H. H. Collins, Jr.'s *America's Own Refugees* (Princeton). B. U. Ratchford, *American State Debts* (Duke), approaches the subject from the historical, economic, and administrative point of view.

THE WESTWARD MOVEMENT

Problems of the changing West are dealt with in essay form in J. P. Nichols and J. G. Randall (eds.), *Democracy in the Middle West, 1840-1940* (Appleton-Century). E. Dick, *Vanguards of the Frontier* (Appleton-Century), describes life in the Northern Plains and Rocky Mountains before the coming of the homeseeker. L. R. Hafen and C. C. Rister, *Western America* (Prentice-Hall), is a factual survey of the exploration and settlement of the trans-Mississippi region. R. C. Overton, *Burlington West* (Harvard) treats in scholarly manner that road's colonization policy. The public lands receive attention in H. S. Zahler, *Eastern Workingmen and National Land Policy, 1829-1862* (Columbia), and in H. H. Dunham, *Government Handout: a Study in the Administration of the Public Lands, 1875-1891* (published by the author). Indian difficulties are discussed in G. D. Harmon, *Sixty Years of Indian Affairs* (North Carolina), covering from 1790 to 1850; Fairfax Downey, *Indian-Fighting Army* (Scribner), a

reasonably complete history of the Indian wars seen through army eyes; and Flora Seymour, *Indian Agents of the Old Frontier* (Appleton-Century). J. H. Jackson, *Anybody's Gold* (Appleton-Century), is an absorbing story of California's mining towns. R. G. Cleland, *The Cattle on a Thousand Hills* (Huntington Library), describes life in Southern California from 1850 to 1870.

THE SOUTH

W. J. Cash, *The Mind of the South* (Knopf), dissects critically Southern thought from the earliest days. A valuable discussion of the Confederate judiciary is W. M. Robinson, Jr., *Justice in Grey* (Harvard). Other aspects of Southern life are considered in L. Mumford, *The South in Architecture* (Harcourt, Brace), a group of lectures; J. C. Robert, *The Road from Monticello* (Duke), the Virginia slavery debate of 1832; A. A. Taylor, *The Negro in Tennessee, 1865-1880* (Associated Publishers); H. L. Swint, *The Northern Teacher in the South, 1862-1870* (Vanderbilt).

STATE AND LOCAL HISTORY

The Ohio State Archaeological and Historical Society has begun to publish a coöperative history that compares favorably with those of Illinois and New York. Two volumes have appeared: B. W. Bond, Jr., *The Foundations of Ohio*, and F. P. Weisenburger, *The Passing of the Frontier, 1825-1850*. In addition to the W.P.A. guides, which are now complete, the following state histories may be noted: K. T. Abbey, *Florida, Land of Change* (North Carolina); P. S. Fritz, *Colorado, the Centennial State* (Prentice-Hall); and J. Daniels, *Tar Heels: a Portrait of North Carolina* (Dodd, Mead). Various aspects of urban life are described in H. Owens, *Baltimore on the Chesapeake* (Doubleday, Doran); A. Binns, *Northwest Gateway: the Story of the Port of Seattle* (Doubleday, Doran); W. G. Saltonstall, *Ports of Piscataqua* (Harvard); W.P.A. Writers' Project, *Boston Looks Seaward: the Story of the Port, 1630-1940* (Boston: Humphries);

P. Jacobson, *City of the Golden 'Fifties* (California), life in San Francisco at that time; A. T. Heiser, *Hamilton in the Making* (Mississippi Valley Press), the first years of an Ohio town; F. G. Davenport, *Cultural Life in Nashville on the Eve of the Civil War* (North Carolina); T. E. Tallmadge, *Architecture in Old Chicago* (Chicago).

MILITARY HISTORY

F. S. Haydon's *Aeronautics in the Union and Confederate Armies* (Johns Hopkins) is the first of two volumes on a little known subject. S. F. Horn's *The Army of Tennessee* (Bobbs-Merrill), is a model of its kind. Our experience with citizen soldiers is discussed in J. M. Palmer's *America in Arms* (Yale).

TESTIMONIAL VOLUME

E. F. Goldman (ed.), *Historiography and Urbanization: Essays in American History in Honor of W. Stull Holt* (Johns Hopkins).

CONTINENTAL EUROPE

American scholars continued to make significant contributions in 1941 to the history of countries other than their own. Perhaps the outstanding work of the year was M. Rostovtzeff's *The Social and Economic History of the Hellenistic World* (Oxford), a worthy successor in three volumes to the author's earlier writings.

Other important books in Ancient history include *The Greek Political Experience: Studies in Honor of William Kelly Prentice* (Princeton); *Athenian Studies Presented to William Scott Ferguson* (Harvard); J. B. Gitler, *Social Thought Among the Early Greeks* (Georgia); W. O. E. Oosterley, *The Jews and Judaism during the Greek Period* (Macmillan); J. H. Oliver, *The Sacred Gerousia* (Princeton); R. L. Scranton, *Greek Walls* (Harvard); and C. G. Starr, Jr., *The Roman Imperial Navy, 31 B.C.-A.D. 324* (Cornell).

In the Medieval period there appeared M. P. Gilmore, *Arguments from Roman Law in Political Thought, 1200-1600* (Harvard); J. M.

Mecklin, *The Passing of the Saint: a Study of a Cultural Type* (Chicago); B. Miller, *The Palace School of Muhammad the Conqueror* (Harvard).

For the Modern era the following are significant: E. M. Acomb, *The French Laic Laws, 1879-1889* (Columbia); W. F. Church, *Constitutional Thought in Sixteenth Century France* (Harvard); G. D. Crothers, *The German Elections of 1907* (Columbia); R. W. Hale, *Democratic France: the Third Republic from Sedan to Vichy* (Coward-McCann); M. P. Harney, *The Jesuits in History* (N. Y.: American Press); C. J. H. Hayes, *A Generation of Materialism, 1871-1900* (Harper); P. H. Lang, *Music in Western Civilization* (Norton); K. S. Latourette, *The Great Century, A.D. 1800-A.D. 1900* (Harper), the fourth volume in his history of the expansion of Christianity; R. R. Palmer, *Twelve Who Ruled: the Committee of Public Safety during the Terror* (Princeton); R. J. Rath, *The Fall of the Napoleonic Kingdom of Italy, 1814* (Columbia); G. H. Rupp, *A Wavering Friendship: Russia and Austria, 1876-1878* (Harvard); E. V. Souleyman, *The Vision of World Peace in Seventeenth and Eighteenth Century France* (Putnam); L. Thorndike, *A History of Magic and Experimental Science* (Columbia), the fifth and sixth volumes of this monumental work; R. W. Timms, *Germanizing Prussian Poland* (Columbia); P. Viereck, *Metapolitics: From the Romantics to Hitler* (Knopf).

BRITISH EMPIRE

No single work was outstanding. Meritorious contributions were M. M. Bevington, *The Saturday Review, 1855-1868* (Columbia); C. F. Brand, *British Labour's Rise to Power* (Stanford); J. H. Hexter, *The Reign of*

King Pym (Harvard); G. C. Homans, *English Villagers of the Thirteenth Century* (Harvard); P. Knaplund, *The British Empire, 1815-1939* (Harper); E. C. Mack, *Public Schools and British Opinion since 1860* (Columbia); L. A. Marchand, *The Athenaeum: a Mirror of Victorian Culture* (North Carolina); M. J. Quinlan, *Victorian Prelude: a History of English Manners, 1700-1830* (Columbia); G. Smith, *The Treaty of Washington, 1871: a Study in Imperial History* (Cornell). Two testimonial volumes are *Essays in Modern English History in Honor of Wilbur Cortez Abbott* (Harvard), and C. W. de Kiewiet (ed.), *Studies in British History* (Iowa), in honor of Harry Grant Plum.

ASIA AND AFRICA

W. Bingham, *The Founding of the T'ang Dynasty: the Fall of Sui and Rise of T'ang* (American Council of Learned Societies); G. W. Brown, *Economic History of Liberia* (Associated Publishers); F. M. Keesing, *The South Seas in the Modern World* (Day); P. M. A. Linebarger, *The China of Chiang K'ai-shek: a Political Study* (World Peace Foundation); V. Thompson, *Thailand: the New Siam* (Macmillan); M. E. Townsend, *European Colonial Expansion since 1871* (Lippincott).

LATIN AMERICA

G. Ireland, *Boundaries, Possessions and Conflicts in Central and Northern America and the Caribbean* (Harvard); J. G. Leyburn, *The Haitian People* (Yale); J. F. Rippey, *South America and Hemisphere Defense* (Louisiana State); G. C. Vaillant, *Aztecs of Mexico* (Doubleday, Doran); A. P. Whitaker, *The Huancavelica Mercury Mine* (Harvard).

BIOGRAPHY

By MALCOLM OAKMAN YOUNG

REFERENCE LIBRARIAN, PRINCETON UNIVERSITY

GENERAL

In the English periodical, *Fortnightly Review*, for September there is a survey of biography as a literary form, by Eric Gillet. In his last paragraph is this: "Nowadays biography is regarded as an important and highly readable literary form." We believe the latter to be especially true because of the increasingly numerous works of informal nature, often with very minor individuals as their subjects, a type which has for one of its earliest examples Clarence Day's *Life with Father*, in 1935, and with several representatives scattered through the 1941 list. *The Art of Biography in Eighteenth Century England* (Princeton Univ. Press) is a scholarly work in two volumes by Donald A. Stauffer, who previously had covered the subject up to 1700.

COLLECTIVE WORKS

Two anthologies of biographical selections have appeared: the first is edited by Edgar Johnson, *A Treasury of Biography* (Howell Soskin), and one edited by Dwight Durling and William Watt entitled *Biography, Varieties and Parallels* (Dryden Press). Henry and Dana L. Thomas have continued their series with four volumes of *Living Biographies* (Garden City), scientists, poets, philosophers, composers each making up a volume. Oscar Thompson, musical authority, has edited *Great Modern Composers* (Dodd, Mead). Kenneth Umbreit's *Founding Fathers: Men Who Shaped Our Tradition* (Harper), includes Washington, Jefferson, John and Samuel Adams, John Hancock, and Patrick Henry. Carl Van Doren's *Secret History of the American Revolution* (Viking) is of value here in its biographical information on Benedict Arnold and others. William H. Baumer Jr's *Not All Warriors* (Smith and Durell) portrays 19th century

West Pointers not in military life. Other volumes within the group are Chelsea Fraser's *Famous American Fliers* (Crowell), William H. Hobbs' *Explorers of the Antarctic* (House of Field); H. A. DeWeerds' *Great Soldiers of the Two World Wars* (Norton), also Philip H. Lotz' *Founders of Christian Movements* (Association Press), and John T. Flynn's *Men of Wealth* (Simon & Schuster) which gives us 12 men dating from the Renaissance to the present. Two families, each including several generations of American life, the Astors and the Vanderbilts, are presented by Wayne Andrews (Harcourt, Brace) and Harvey O'Connor (Knopf) respectively. A similar work is *The Clarks: An American Phenomenon* (N.Y. Silver Bow Press) by William D. Mangam, who tells the story of the mining family.

THE PRESIDENTS

The earlier days of James Madison are well produced for us by Irving Brant (Bobbs, Merrill) who is expected to continue the work in two later volumes. *Zachery Taylor: Soldier of the Republic* (Bobbs, Merrill) is by Holman Hamilton, and *William Henry Harrison* (Richmond, Garrett and Massie) is by James A. Green. A day-by-day account of Lincoln's activities from 1809 through 1839 is found in a work by Harry E. Pratt (Springfield, Ill., Abraham Lincoln Association). Lincoln as President-elect is the subject of Henry Villard's *Lincoln on the Eve of '61* (Knopf). Much of Lincoln is found in the detailed history by Margaret K. Leech, *Reveille in Washington, 1860-1865* (Harper). A valuable reference work is the *Theodore Roosevelt Cyclopaedia*, published by the Roosevelt Memorial Association. An addition to the Wilson bibliography is the study *Woodrow Wilson* (Lippincott),

BIOGRAPHY

by David Loth. Gerald W. Johnson attempts an analysis of Franklin D. Roosevelt in *Roosevelt: Dictator or Democrat?* (Harper).

MEN IN PUBLIC LIFE

Sir William Phips, the Maine sea captain who became Royal Governor of Massachusetts, is the earliest figure in this group, in a work by Alice Lounsbery (Scribner). Carl R. Woodward continues this list with his *Ploughs and Politicks* (Rutgers), dealing with the New Jersey Charles Reed, active during the 18th century. John M. Palmer is the 19th century soldier and politician treated by George T. Palmer in his *A Conscientious Turncoat* (Yale). The foreign policy of the Secretary of State and Ambassador to the Court of St. James, Thomas F. Bayard, is analysed by Charles C. Tansill (Fordham). William M. Evarts, whose career included terms as Attorney-General and Secretary of State, is the subject of a work by Chester L. Barrows (Univ. of North Carolina Press).

Henry M. Teller, *Defender of the West* (Caxton) concerning the late Colorado Senator, is by Elmer Ellis. *Louisiana Hayride* (Morrow), by Harnett T. Kane is possibly the best portrayal of Huey Long. Three autobiographical works are *Fifty Years of Public Life* (Duke) by the former Secretary of Commerce, Daniel C. Roper; and *Editor in Politics* (Univ. of North Carolina) in which Josephus Daniels continues his memoirs from the second Cleveland term to Wilson; and *Diplomat Between Wars* (Longman, Green), the continuation of Hugh Wilson's valuable reminiscences. A book much in demand is Ambassador Dodd's *Diary 1933-1938* (Harcourt, Brace). Clarence Darrow for the Defence (Doubleday, Doran) is a biography by Irving Stone. A delightful and illuminating book is *Pillar to Post* (Scribner) by Henry S. Curran, New York City's Chief Magistrate.

MILITARY AND NAVAL

With Sword and Lancet (Richmond, Garrett and Massie) by Joseph M.

Waterman, is the biography of the Revolutionary hero General Hugh Mercer. Another Revolutionary figure, the picturesque "Mad Anthony Wayne, is portrayed by Harry Emerson Wildes (Harcourt, Brace). Samuel W. Patterson has given us a scholarly work in *Horatio Gates: Defender of American Liberties* (Columbia Univ. Press). The Revolution and the War of 1812 are background for *The Admirable Trumpeter* (Doubleday, Doran), a biography of Gen. James Wilkinson by Thomas R. Hay and M. R. Werner. *Captain Paul* is the readable account of John Paul Jones, by Edward Ellsberg (Dodd, Mead). The United States Naval Institute published for Charles Lee Lewis, his narrative of Admiral David Glasgow Farragut. A Confederate General is found in "*Fightin' Joe*" Wheeler (Louisiana State Univ. Press), by John P. Dyer. The subject of several biographies is again in a well done work—*George B. McClellan, The Man who Saved the Union* (Univ. of North Carolina) by H. H. Eckenrode and Bryan Conrad.

LITERARY FIGURES

The Revolutionary poet, Philip Freneau, is again the subject of a study, this time by Lewis Leary, in *That Rascal Freneau* (Rutgers Univ. Press). A well received new work on Nathaniel Hawthorne is by Edward Mather (Crowell). One of the more scholarly works in this group is Arthur H. Quinn's *Edgar Allan Poe* (Appleton). A well done picture *Young Edgar Allan Poe* (Dodd, Mead) is written by Laura Benét for younger readers. Whitman Bennett's *Whittier: Bard of Freedom* (Univ. of North Carolina Press) was well reviewed. *Crusader in Crinoline* (Lippincott) is another analysis of Harriet Beecher Stowe by Forrest Wilson. Frances Winwar has added to her list of literary subjects in her *American Giant* (Harper) a provocative book on Walt Whitman. Another juvenile worth mentioning is Babette Deutsch's *Walt Whitman: Builder for America* (Messner).

Three regional writers deserve at-

tention: the life and work of James Hall, the nineteenth century literary pioneer of the Ohio Valley, are recorded by John T. Flanagan (Univ. of Minnesota Press). Charles Egbert Craddock (Mary Noailles Murfree), the Tennessee novelist, is studied by Edd Winfield Parks (Univ. of North Carolina Press), while Joel Chandler Harris (Uncle Remus) is reproduced in a worthy book for young readers (Messner).

Two important humorists follow: *John Kendrick Bangs* (Knopf) is by the subject's son Francis H. Bangs. Elmer Ellis' *Mr. Dooley's America* (Knopf), is, of course, concerned with Finley Peter Dunne. *My Father, Joaquin Miller* is by the daughter of the "Poet of the Sierras," and published by her (Juanita Miller, Oakland, Calif.) A new study of the enigmatic Ambrose Bierce is by Franklin Walker (San Francisco, Colt Press). The humanist Irving Babbitt is the subject of a series of memoirs and studies in a volume edited by Frederick Manchester and Odell Shepherd (Putnam.)

The Fun I've Had (Reynal and Hitchcock) is an informal autobiography by the playwright Bayard Veiller. The author and educator, Cyrus Adler, entitled his memoirs *I have Considered The Days* (Philadelphia, Jewish Publication Society). A well illustrated volume is Karl Detzer's *Carl Sandburg* (Harcourt, Brace). A number of autobiographical volumes conclude the group: Margaret Deland's *Golden Yesterdays* (Harper); Irving S. Cobb's *Exit Laughing* (Bobbs, Merrill); the equally amusing Rex Beach's *Personal Experiences* (Harper); M. A. DeWolfe Howe's (Little, Brown) *A Venture in Remembrance*; the early days of Ray Stannard Baker (David Grayson) are found in his *Native American* (Scribner).

SCIENTISTS

Nathaniel Bowditch qualifies for this group because of his invaluable assistance to all generations of navigators. His latest biography is aptly called *Yankee Stargazer* (McGraw-

Hill), written by Robert E. Berry. A pioneer in radio is portrayed by his wife Helen M. Fessenden: *Fessenden, Builder of Tomorrow* (Edward McCann). A new American, Leopold Infeld, gives his varied experiences in *Quest: The Evolution of a Scientist* (Doubleday, Doran). Two delightful volumes are by brothers: the botanist, Donald Culross Peattie wrote *The Road of a Naturalist* (Houghton Mifflin), and the geographer and geologist Roderick Peattie reminisces in *The Incurable Romantic* (Macmillan).

BUSINESS MEN

The volumes concerning the Astor and Vanderbilt families have already been mentioned. Here can be listed Marquis James' latest work, *Alfred I. Du Pont: The Family Rebel* (Bobbs, Merrill). The head of General Motors, Alfred P. Sloan Jr., called his autobiography *Adventures of a White Collar Man* (Doubleday, Doran). Much about the oil industry is found in *Decision Reserved* (Dorrance), the autobiography of the lawyer and pioneer in the oil field, Charles A. Ludey.

EDITORS AND PUBLISHERS

Joseph Pulitzer and his World (Vanguard) by James W. Barrett is an important picture. William Allen White, Kansas' famous editor, is the subject of two books, one by Everett Rich (Farrar and Rinehart) and one by Frank P. Clough (McGraw-Hill). H. L. Mencken continued his memoirs in *Newspaper Days, 1899-1906* (Knopf). The pleasant reminiscences of the Middle West smalltown newspaperman Victor Holmes are entitled *Salt of the Earth* (Macmillan). *Father and his Town* (Houghton Mifflin) by Rich and Barry is one of the most contributive of the recent informal biographies. Several autobiographical volumes have appeared: Eddie Doherty, newspaperman, entitles his *Gall and Honey* (Sheed and Ward); after 30 years in newspaper work, Emile Gauvreau has written *My Last Million Readers* (Dutton); the correspondent Louis Fischer has written of men and events between the wars,

BIOGRAPHY

in *Men and Politics* (Duell, Sloan and Pearce). Frederic Cook Morehouse, editor of *The Living Church*, is found portrayed in *Editor's Quest* (N.Y., Morehouse) by W. B. Stevens.

ARTISTS

Father of the Blues (Macmillan) is the autobiography of W. C. Handy. A frank portrait is Alma Power-Water's *John Barrymore* (Messner). *Lord Broadway—Variety's Sime* (W. Funk) is the story of Sime Silverman, by Dayton Stoddart. Two autobiographies are *Here Am I* (Random House) by the artist and writer Samuel J. Woolf, and *Thus Far* (American Artists Group) by the opera singer Mary Mellish. Marian Anderson, perhaps our leading negro singer, is the subject of a book by Kosti Vehanen (McGraw-Hill).

THE CLERGY AND EDUCATORS

Helen Margaret's *Father De Smet* (Farrar and Rinehart) is a picture of the pioneer priest of the Rocky Mountains. Orestes Brownson, the wanderer in spiritual fields, is the subject of a new biography, this time by Doran Whalen (Sheed and Ward). *The Man Who Stayed in Texas* (McGraw-Hill) is a picture of the beloved Rabbi Henry Cohen, active in all welfare work in Galveston, written by Anne Nathan and H. I. Cohen. Similarly active in good deeds was Claude Williams, preacher and worker among the underprivileged of the South, whose biography is by Cedric Belfrage (Modern Age Books). The late Cardinal Hayes of New York is recalled by John B. Kelly (Farrar and Rinehart). The co-founder of Maryknoll, Bishop James A. Walsh is remembered in the biography *All the Day Long* (Longmans, Green) by Daniel Sargent. Two pleasant books of boyhood reminiscences are *A Small-Town Boy* (Macmillan) by the Quaker theologian Rufus King, and *Summer Yesterdays in Maine* (Harper) by Dean Willard L. Sperry of Harvard Divinity School.

A little known scientist and educator of the early 19th century, Amos Eaton, is studied by Ethel M. Mc-

Allister (Univ. of Pennsylvania Press). The Harvard dean and professor of English, Chester Noyes Greenough, is portrayed by Ruth H. Greenough (Harvard Cooperative Society) in a two volume work, the second being his collected studies. One of the earlier professors at Stanford University, Henry Rushton Fairclough, entitles his memoirs *Warming Both Hands* (Stanford Press). The late Chancellor Kirkland of Vanderbilt University deserves the biography by Edwin Mims (Vanderbilt Press). A very readable volume is made up of the varied experiences of William G. Morse, now Purchasing Agent of Harvard University, with the title *Pardon My Harvard Accent* (Farrar and Rinehart).

THE MEDICAL PROFESSION

This group starts out with Dr. Alfreda Withington's *Mine Eyes Have Seen* (Dutton) covering experiences in Labrador, France, the Kentucky Mountains. *The Man Who Lived for Tomorrow* (Dutton) by Wade W. Oliver concerns Dr. William Hallock Park, who lead the fight against diphtheria. Dr. Sylvester M. Lambert writes in delightful fashion of his professional and personal experiences in the South Seas: *A Yankee Doctor in Paradise* (Little, Brown). Simon and James T. Flexner have made an important contribution in *William Henry Welch and the Heroic Age of American Medicine* (Viking), adding to the fame of the Johns Hopkins Medical School. An inspiring work is *Born That Way* (Day) by Dr. Earl R. Carlson, himself handicapped but a physician among those similarly handicapped. *Doctor Wood: Modern Wizard of the Laboratory* (Harcourt, Brace) is by William Seabrook. What promises to be one of the most popular in this group is H. B. Clapesattle's *The Doctors Mayo* (Univ. of Minnesota).

WESTERNERS

Perhaps one can logically start this group with the publication by the California Historical Society of Henry R. Wagner's *Juan Rodriguez Cabrillo*,

who is called the discoverer of the coast of California. Then Louis K. Koontz has surveyed in *Robert Dinwoodie* his subject's career in American Colonial government in the westward expansion. The picturesque Henry de Tonty, fur trader of the Mississippi Valley, has merited a biography by Edmund R. Murphy (Johns Hopkins Univ. Press). The third and final part of *Marcus Whitman, Crusader* has appeared, edited by Archer B. and Dorothy P. Hulbert and published by the Stewart Commission of Colorado College, Denver. *Master of the Mississippi* (Houghton Mifflin) is the story of Henry Shreve, pioneer in steamboat transportation. A popular volume is Burton Rascoe's *Belle Starr, Bandit Queen* (Random House), the figure of the old Southwest.

Elias Boudinot, Cherokee, and his America (Univ. of Oklahoma Press) by Ralph H. Gabriel is the story of the early nineteenth century Indian editor, translator, and leader among his people. Two other Indians receive attention: first, *Yellow Wolf: His Own Story* (Caxton); this story of a survivor of the Nez Perce War is told by Lucullus V. McWhorter. Then the Nez Perce leader Joseph is portrayed by Helen A. Howard (Caxton). Dr. Valentine T. McGillycuddy, the government agent for the Sioux, finds a biographer in Julia B. McGillycuddy (Stanford Univ. Press). The autobiographical *Doctor Asa* (Los Angeles, Ward Ritchie Press) is a picture of an early mining community by Asa W. Collins. Early Wyoming days are found in *Sagebrush Dentist* (McClung) told by Will Frackelton to Herman G. Seely. Lastly, another good seller is *No Life for a Lady* (Houghton Mifflin), a memoir of western life by Agnes Morley Cleveland.

MISCELLANEOUS

Robert Carter of Nomini Hall (Princeton Univ. Press) is the picture of this eighteenth century Virginia planter. *Whittling Boy* (Harcourt, Brace) by Roger Burlingame, is the story of the inventor Eli Whitney. A

two-volume work by Pauline W. Burke recalls the little remembered niece of Mrs. Andrew Jackson and often White House hostess, in *Emily Donelson of Tennessee* (Garrett and Massie). A book of social importance is William Alexander Percy's *Lanterns on the Levee* (Knopf), delightful recollections of a planter's son. *Corner Druggist* (Prentice-Hall), the story of the author's father is a picture of a character and small town life, by Robert B. Nixon Jr. Similar in aim is Ethel Hueston's *Preacher's Wife* (Bobbs-Merrill), the biography of the author's mother.

A valuable portrayal of childhood in Germany of the 'nineties is *The House I Knew* (Houghton Mifflin) by Elizabeth Neilson (Mrs. William A. Neilson). Osa Johnson (Mrs. Martin Johnson) continues her reminiscences of adventure in *Four Years in Paradise* (Lippincott). Dave Robeson's *Louis Roth* (Caxton) deals with a wild animal trainer. A timely book is Blanche C. Williams' *Clara Barton, Daughter of Destiny* (Lippincott).

One autobiography of a worker in the development of industrial relations is Mary Barrett Gilson's *What's Past is Prologue* (Harper). The social worker, Florence Monahan, calls her autobiography *Women in Crime* (Washburn). Reminiscences of a life ranging from the West to the Court of St. James, is *I'd Live It Over* (Farrar and Rinehart) by Flora C. Cloman.

A group with aspects in common are David Philipson's *My Life as an American Jew* (Cincinnati, Kidd); Eugene Bagger's *For the Heathen Are Wrong* (Little Brown), the experience of a half Jew, one time journalist in America, viewer of the fall of Europe; Simon Kaplan's *Once a Rebel* (Farrar and Rinehart) by a Russian Jew who became an American business man; Martin Gumpert's *First Papers* (Duell), the life and comments of an American in the making. An amusing volume is *Young Man of Caracas* (Ives Washburn) by T. B. Ybarra, half New England, half Venezuelan. The stories of two American heroes conclude this varied group: *Will*

TRAVEL

Rogers: His Wife's Story (Bobbs, Merrill) by Betty Rogers, and Richard G. Hubler's *Lou Gehrig, the Iron Man of Baseball* (Houghton Mifflin).

FOREIGN SUBJECTS

Christopher Columbus (Milwaukee, Bruce) is a good depiction of "life and times" by Daniel Sargent. The group of French characters is varied: *Jean-Baptiste Rousseau* (Princeton Univ. Press) a biographical and critical work by Henry A. Grubbs; Sidney J. French's *Torch and Crucible* (Princeton Univ. Press), the story of the scientist Lavoisier with his setting in the French Revolution; *Robespierre and the Fourth Estate* (Modern Age) by Ralph Korngold.

The romantic figure, the Empress Eugénie, is set in the life of the Second Empire by Rita Wellman (Scribner). Garrett Mattingly's *Catherine of Aragon* (Little, Brown) tells of the first wife of Henry VIII. *The Youth of Mary Stuart, Queen of Scots* (Dorance) is by Bernard C. Weber. *Great Lady* (Knopf) is the biography by Margaret Gilmour of Barbara Villiers, mistress of Charles II. Popularly received is Dr. Manfred S. Guttmacher's *America's Last King* (Scribner), an analysis of George III by a

psychiatrist, who has also done a good work as historian.

A detailed account is *Hester Lynch Piozzi* (Mrs. Thrale) (Oxford), carefully done by James L. Clifford. An authoritative work on Sara Coleridge has been done by Earle Leslie Griggs in *Coleridge Fille* (Oxford). Largely critical is Willem D. Dunkel's *Sir Arthur Pinero* (University of Chicago Press). *Friedrich von Gentz, Defender of the Old Order* (Univ. of Wisconsin Press) concerns an eighteenth century Prussian. Hendrick van Loon's *Life and Times of Johann Sebastian Bach* (Simon and Schuster) is a very readable work. Crane Brinton's *Nietzsche* (Harvard Univ. Press) is an enlightening and timely analysis.

The Soong Sisters (Doubleday, Doran) is a picture of three famous Chinese ladies by Emily Hahn. A strange 16th century personage, often quoted at the moment, forms the figure in Lee McCann's *Nostradamus, The Man Who Saw Through Time* (Creative Art Press). Bertita Harding's *Amazon Throne* (Bobbs, Merrill) is the story of the Braganzas of Brazil. Edgcumb Pinchon's *Zapata the Unconquerable* (Doubleday, Doran) is a fictionized biography of the Mexican General.

TRAVEL

BY ELIZABETH T. PLATT

LIBRARIAN, AMERICAN GEOGRAPHICAL SOCIETY

The steadily increasing difficulty of access to more remote areas is clearly reflected in the 1941 output of travel books. Of the total number included in this survey, more than half pertain to the Western Hemisphere with a far smaller percentage than usual dealing with areas outside of the United States.

UNITED STATES

The year marked the completion of the project *American Guide Series* in so far as the volumes dealing with the states are concerned. Volumes were

published for Alabama (R. R. Smith), Arkansas (Hastings House), Colorado (Hastings House), Indiana (Oxford), Louisiana (Hastings House), Michigan (Oxford), Missouri (Duell, Sloan and Pearce), Oklahoma (Univ. of Oklahoma Press), South Carolina (Oxford), Utah (Hastings House), Washington (Binfords and Mort), West Virginia (Oxford), Wisconsin (Duell, Sloan and Pearce), Wyoming (Oxford).

To the series *Rivers of America* (Farrar and Rhinehart) were added F. B. Streeter's, *Kaw, The Heart of a Nation*; H. S. Canby, *The Brandy-*

wine; and A. B. Tourtellot, *The Charles*.

American Folkways is a new series (Duell, Sloan and Pearce) which, according to the editor, Erskine Caldwell, "examines the habits of thought and behavior of Americans from the point of view of the men and women who propagated the national culture. The sources of this culture are embedded in widely scattered regions of the country . . . Each of these sections has created an indigenous culture of its own, and each volume in this series naturalizes one of these cultural worlds." The volumes issued during the year were Edwin Corle, *Desert Country*; Haniel Long, *Piñon Country*; Stanley Vestal, *Short Grass Country*; and O. E. Rayburn, *Ozark Country*.

Through the American Landscape (Univ. of North Carolina) by Kaj Klitgaard is an attempt to analyze and reconstruct the American landscape as seen through the eyes of artists. Another interpretive but older view is A. J. Torrielli's *Italian Opinion of America as Revealed by Italian Travelers, 1850-1900* (Harvard Univ. Press), a summary of the impressions of more than 100 Italian travelers in the United States relating to education, arts, American women, the negro question, and democracy in America.

In *Vermont is Where You Find It* (Harcourt, Brace) Keith Jennison portrays through a series of photographs accompanied by brief comments "the speech and idiom of a tough-minded, high-hearted people." Also of Vermont is C. E. Crane's *Winter in Vermont* (Knopf) and *Footpath in the Wilderness: The Long Trail in the Green Mountains of Vermont* (Middlebury College Press).

Croswell Bowen's *Great River of the Mountains* (Hastings House) is a glimpse of the Hudson and the life in its valley from source to mouth. Helen Gere Cruickshank's *Bird Islands Down East* (Macmillan) is a readable account of photographing birds by the author and her husband on islands off the Maine coast—Machias, Seal, Old Man, Hog, Matinicus.

Turning from the Atlantic to the Pacific, there are Max Miller's *Harbor of the Sun*, *The Story of the Port of San Diego* (Doubleday, Doran) from the time of Cabrillo to the present, and Nancy Wilson Ross, *Farthest Reach, Oregon and Washington* (Knopf) written to "give the outsider a feeling of the unique flavor of the particular part of America, and give the insider a heightened sense of what he has."

MEXICO AND CENTRAL AMERICA

Many Mexicos (Putnam) by L. B. Simpson is not a history of Mexico but "an attempt at exposition and digestion—a discussion of such institutions, of such habits of life and thought, and of the lives of such men as . . . have left the deepest impress on the country." John Steinbeck and E. F. Rickett's *Sea of Cortez* (Viking) is "a leisurely journal of travel and research with a scientific appendix comprising materials for a source book on the marine animals of the Panamic faunal province" based on two months collecting in the Gulf of California. Also dealing with the Gulf is Randolph Leigh's *Forgotten Waters* (Lippincott). In *River of Ruins* (Holt) L. J. Halle, Jr. writes of a two-man expedition to the Pasión river, Petén, Guatemala to study the traces of the once flourishing great Middle American civilization of which the scattered ruins are today almost obscured by dense forest cover.

SOUTH AMERICA

Kathleen Romoli's *Colombia, Gateway to South America* (Doubleday, Doran) is a remarkably fresh and illuminating account of a land of contrasts. Earl P. Hanson's *Chile, Land of Progress* (Reynal and Hitchcock) is a good general discussion of modern Chile, including chapters on economic and industrial development, culture, education, social legislation. Nicol Smith, author of *Burma Road*, has written *Bush Master: Into the Jungles of Dutch Guiana* (Bobbs-Merrill). Jules Henry's *Jungle People: A Kaingáng Tribe of the Highlands of Brazil* (Augustin) is an an-

thropological study based on the author's observations in Santa Catarina. *Electric Eel Calling* (Scribner) by Shelby Shackelford is "a record of an artist's association with a scientific expedition to study the electric eel at Santa Maria de Belém do Para, Brazil." Stefan Zweig's *Brazil, Land of the Future*, translated by Andrew St. James (Viking), is a sympathetic and enthusiastic appraisal of modern Brazil by one who considers it "one of the most lovable countries of our world."

The "Peruvian and Chilean . . . experiences of . . . two plant hunting expeditions sent out by the University of California Botanical Garden" are to be found in T. H. Goodspeed's *Plant Hunters in the Andes* (Farrar and Rinehart). To his well-known volumes on Europe and Asia, John Gunther has added *Inside Latin America* (Harper). Sydney A. Clark's *The West Coast of South America* (Prentice-Hall) contains travel hints for Colombia, Panama, Ecuador, Peru, Bolivia, Chile, and Argentina, and is a companion volume to his *East Coast of South America* (1940). Also for the traveler is L. L. Sell's *Pan American Dictionary and Travel Guide*, 2nd ed. (Putnam). Carl Crow's *Meet the South American* (Harper) is an informal, conversational account by the author of *Forty Million Customers*.

EUROPE

Sparse though the year's supply of titles for Europe was, it may be considered noteworthy by the inclusion of Rebecca West's two-volume work on Yugoslavia, *Black Lamb and Grey Falcon* (Viking). In *Finland Forever* (Harcourt, Brace) Hudson Strode has produced an interpretive study of the country and its people.

AFRICA

Richard U. Light's *Focus on Africa* (American Geographical Society) is a remarkable record, photographic and verbal, of a trip made by airplane from Capetown to Cairo in the winter of 1937-1938. In *Behind God's Back* (Harcourt, Brace) Negley Farson

analyzes conditions in Southwest and Central Africa, based on first-hand observations which included a trip across the continent. Emil Lengyel's *Dakar, Outpost of Two Hemispheres* (Random House) is a consideration of the strategic importance of the area. Other volumes on Africa are G. W. Harley's *Native African Medicine with Special Reference to the Practice in the Mano Tribe of Liberia* (Harvard Univ. Press); J. S. Childer's *Mumbo Jumbo Esquire—A Book About the Two Africas* (Appleton-Century), and Osa Johnson's *Four Years in Paradise* (Lippincott) dealing with Lake Paradise elephant country.

ASIA

Two very different but interesting works on Persia are Erich F. Schmidt's *Flights over Ancient Cities of Iran* (Univ. of Chicago Press, 1940), which contains a magnificent collection of airplane photographs and related accounts of the journeys and flights involved in the study of the region, and S. W. Persia: *A Political Officer's Diary, 1907-1914* (Oxford Univ. Press) by Sir Arnold Wilson, based on his early diaries and letters to his parents and covering a period of interest because of its diplomatic activities. H. C. V. Morton's *Middle East* (Dodd, Mead) deals with Egypt, Palestine, Turkey, Greece, and Iraq.

A scholarly account of Thailand is available in Virginia Thompson's *Thailand, the New Siam* (Macmillan). Owen Lattimer's *Mongol Journeys* (Doubleday, Doran) over the route of Marco Polo is "partly a record of a vanishing way of life, partly a footnote on the processes of decay and destruction, partly of glimpses of that which is coming to pass." Verging rather towards history than travel is Eloise Talcott Hibbard's *Jesuit Adventures in China During the Reign of K'ang Hsi* (Dutton). It attempts "to gather together the facts of the life and reign of sixty years of K'ang Hsi, with special emphasis on his contacts with Europe and on the position of importance that he occupied in relation to the world beyond the borders

of his empires." Hassoldt Davis' *Land of the Eye* (Holt) is "a narrative of the labors, adventures, alarms, and excursions of the Denis-Roosevelt Asiatic expedition to Burma, China, India and the lost kingdom of Nepal."

THE PACIFIC

F. M. Keesing's *The South Seas in the Modern World* (Day) is a welcome contribution to a rather scant literature as is E. H. Bryan, Jr.'s *American Polynesia: Coral Islands of the Central Pacific* (Tongg, Honolulu). Dr. S. M. Lambert's experiences are told in *A Yankee Doctor in Paradise* (Little, Brown).

POLAR REGIONS

Second in the series *Oceans of the World* is Russell Owen's *The Antarctic Ocean* (Whittlesey House), a selection of "the voyages that definitely added to the knowledge of the Antarctic." W. H. Hobbs' *Explorers of the Antarctic* (House of Field) is also an historical study. Turning to the north, there is Gontran de Poncin's *Kabloona* (Reynal and Hitchcock), concerned with "the Eskimo, with his life and traits, his broodings and ruminations" and the "broodings and ruminations" of the author. It is based upon 15 months' journey of 20,000 miles in the Canadian Arctic.

MISCELLANEOUS WORKS

Marvin Klemme's *An American Grazier Goes Abroad* (The Deseret News Press) was written after a year spent in traveling through some 30 countries studying land use, live stock breeding, range management and forestry. In *High Road to Adventure* Earl Hanson has chosen from the realm of travel literature 23 widely diverse selections which include accounts by Churchill, Kearton, Stenfansson, Meade, Holdridge, Courtauld, Fellowes, Wilkins, Ellsberg, Snow, Hanson, Dunn, Lawrence, Chichester, Shackleton, Merryman, Belbenoit, Lindbergh, Zenzinov, Sheean, Dana, Prescott.

One interested in travel literature will wish to see, "The Ends of the Earth" (*Yale Review*, Summer, 1941, pp. 833-837), and also the series on medical explorers published in *Ciba Symposia*. An interesting study of imaginary voyages has been made by P. B. Gove *The Imaginary Voyage in Prose Fiction: A History of Its Criticism and a Guide for Its Study, with an Annotated Check List of 215 Imaginary Voyages from 1700-1800* (Columbia University Press).

HISTORICAL TRAVEL

From the books dealing with the historical aspects of travel, a widely diverse selection is made. W. P. Morrell's *The Gold Rushes* (Macmillan) is a tale of the search for gold in Brazil, Siberia, United States, Canada, Australia, South Africa, and Canada. On this subject see also *Pike's Peak Gold Rush: Guidebooks of 1859, by Luke Tierney, William B. Parsons, and Summaries of the Other Fifteen*, edited by LeRoy R. Hafen (Clark). In *High Conquest* James R. Ullman attempts to tell "the story of mountaineering."

L. R. Hafen and C. C. Rister's *Western America* (Prentice Hall) is an account of "the exploration, settlement and development of the region beyond the Mississippi." *Master of the Mississippi, Henry Shreve and the Conquest of the Mississippi* (Houghton, Mifflin) by F. L. Dorsey treats of an early nineteenth century exponent of the Mississippi Valley as a means of transportation in the West. Other volumes dealing with the early development and exploration of the West are E. R. Murphy, *Henry de Tonty, Fur Trader of the Mississippi* (Johns Hopkins Press); Helene Magaret, *Father De Smet, Pioneer Priest of the Rockies* (Farrar and Rinehart); *A Pathfinder in the Southwest: The Itinerary of Lieutenant A. W. Whipple during His Exploration for a Railway Route from Fort Smith to Los Angeles in the Years 1853 and 1854*, edited by Grant Foreman (Univ. of Oklahoma); *Diary and Letters of Josiah Gregg: Southwestern Enterprises, 1840-1847*, ed. by M. G. Fulton

(Univ. of Oklahoma); *Teodoro de Croix and the Northern Frontier of New Spain, 1776-1783; from the Original Document in the Archives of the Indies, Seville*: tr. and ed. by A. B. Thomas (Univ. of Oklahoma); and H. R. Wagner, *Juan Rodríguez Cabrillo, Discoverer of the Coast of California* (California Historical Society Spec. Pub., No. 17).

S. E. Morison has added to his scholarly publications *The Route of Columbus along the North Coast of Haiti, and the Site of Navidad* (American Philosophical Society). Salvador de Madariaga has written of

Hernan Cortés, Conqueror of Mexico (Macmillan).

W. S. Lewis has reconstructed eighteenth century London in *Three Tours through London in the Years 1748, 1776, 1797* (Yale Univ. Press).

The Last of the "Logan" edited by H. W. Thompson recounts "The True Adventures of Robert Coffin, Mariner, in the Years 1854 to 1859 Wherein are Set Forth His Pursuit of the Whale, his Shipwreck on Rapid Reef, his Life Among the Cannibals of Fiji and his Search for Gold in Australia, as told by himself and now first published" (Cornell Univ. Press).

CRITICISM AND BELLES LETTRES

BY PETER MONRO JACK
LECTURER AND CRITIC

GENERAL CRITICISM

MacLeish.—One of the most discussed books of the year was Archibald MacLeish's selected prose, *A Time To Speak* (Houghton Mifflin) by the Librarian of Congress and director of the Bureau of Facts and Figures at Washington. The criticism ranges through poetry, philosophy, education, democracy, international relationships. One of the outstanding discussions was that the librarian should be a propagandist. He should recommend the *right* (political) books to the reader and cautiously hide away those that might be harmful. The other was the paper on "The Irresponsibles," an attack upon present day intellectuals for not taking a strong enough stand for democracy. MacLeish also published two papers, *The American Cause* (Duell), on what artists and writers should do in defense of democracy.

Edmund Wilson and Others.—*The Intent of the Critic* (Princeton) is a symposium by Edmund Wilson, Norman Foerster, John Crowe Ransom, W. H. Auden, edited by Donald A. Stauffer, on the various critical approaches to literature: sociological, aesthetic, ethical, historical. Edmund Wilson has written one of

the best studies in literary criticism in *The Wound and The Bow* (Houghton Mifflin), essays in interpretation of Dickens, Hemingway, Kipling, Joyce, Wharton, Casanova. The intent here is to show that there is some wound or hurt in a man's early environment that turns him into an artist creating a world in which he may live more freely. Mr. Wilson would say that you can not have the strength of the bow without the weakness of the wound. Wilson has also shown his critical discernment in his editing and introduction of Fitzgerald's *The Last Tycoon*. *The Intent of the Artist* is another Princeton University Press symposium from Sherwood Anderson, Thornton Wilder, Roger Sessions, William LeScaze, edited by Augusto Canteno, of the novelist, dramatist, musician, architect. . . .

Allen Tate.—*Reason in Madness* by Allen Tate (Putnam's) argues that there is no tradition of free ideas in America; that capitalist economy has enslaved the common man, that education upholds this slavery, that materialistic science is rationalizing it. Tate believes in a back-to-the-land agrarian movement in the Jeffersonian tradition, and he

also believes that literature is the way to accomplish this.

Brooks and Others.—*Scattered Branches*, edited by Stephen Gwyn (Macmillan) is a series of tributes to the late great poet W. B. Yeats, by C. Day Lewis, William Rothenstein, L. A. G. Strong, and others. *Milton and his Modern Critics* by Logan Pearsall Smith is an attack on certain critics (e.g. Ezra Pound, T. S. Eliot) who have depreciated Milton's greatness (Little, Brown). *The Spirit of Moliere* is an interpretation by the late Prof. Percy Addison Chapman (Princeton), the essence of the comic spirit.

One of the outstanding critical books of the year was F. O. Matthiessen's *American Renaissance*, described as Art and Expression in the age of Emerson and Whitman, a series of studies by a brilliant scholar that reveals further greatness in the American writers (Oxford). *Opinions of Oliver Allston* is Van Wyck Brooks's subtle "autobiography" of his mind, with many allusions to the state of contemporary literature (Dutton). The best study of James Joyce is Harry Levin's *Critical Introduction* (New Directions).

BROADCAST TRANSCRIPTS

Invitation To Learning is one of the radio programs designed to stimulate its listeners to the reading of great books. It is a transcript of broadcast discussions by Allen Tate, Mark Van Doren, and Huntingdon Cairns, dealing with 27 great books of the world (Random House). *Reading I've Liked* is the brilliant idea of the *New Yorker* literary editor, Clifton Fadiman, better known as the quizzer on Information Please radio program, to tell the public of his literary education, of the duties and methods of a reviewer ("My Life is An Open Book"), and to make an anthology, a library in miniature, all in prose and mostly contemporary, of the reading he has most enjoyed, with his own reasons, in separate commentaries, for enjoying them (Simon, Schuster).

INTERPRETATIVE BIOGRAPHY

Concord Group.—*Nathaniel Hawthorne*, subtitled *A Secret Man*, is by Edward Mather (Crowell), a record of Hawthorne and his contemporaries, Emerson, Thoreau, Longfellow, Tickner, a new attitude by a descendant from the same family tree of Cotton and Increase Mather. *Bronson Alcott* is a study by Dorothy McCusker of Alcott as a great educator (Macmillan). *The Writings of Margaret Fuller*, selected and edited by Mason Wade, has admirable research and is a good portrait (Viking). *That Rasca!l Freneau* by Lewis Leary (Rutgers), earliest American poet, is called "A Study in Literary Failure."

Walt Whitman.—*American Giant* is a biography of Walt Whitman and his times by Frances Winwar (Harper), a new interpretation of Whitman with some unpublished letters which are important in an analysis of his character. Miss Babette Deutsch wrote a good biography of Walt Whitman in *Builder For America* (Messner) for younger readers, with selections from his poetry.

Mrs. Stowe, Poe, Whittier.—*Crusader in Crinoline* is a full length portrait of Harriet Beecher Stowe, the most complete, showing her many activities, by Forrest Wilson (Lippincott). *Edgar Allan Poe* by Arthur Hoson Quinn (Appleton) has new documents, especially relating to Poe's marriage and the falsifications of his literary executor. *Whittier*, subtitled *Bard of Freedom*, by Whitman Bennett (North Carolina U.P.) is a biography that does full justice to a great humanitarian.

The Poets.—*Living Biographies of Great Poets* by Henry Thomas and Lee Thomas (Garden City) ranges from Dante to Kipling. *Carl Sandburg*, by Karl Detzer, is an intimate study of the personality and background of the poet. *William Allen White of Emporia* (Whittlesey) is by Frank C. Clough, the managing editor of the *Emporia Gazette*.

British Writers.—*Jonathan Swift, A Giant in Chains* is by Frank S. Godwin (Liveright). *Johnson Without Boswell* is a contemporary pic-

ture of Johnson himself from Mrs. Thrale, Sir John Hawkins, etc. by Hugh Kingsmill (Knopf). *Savage Landor* by Malcolm Elwin (Macmillan) has new things to say of Walter Savage Landor. *Hester Lynch Piozzi* is a portrait of Johnson's friend, Mrs. Thrale (Oxford), by James L. Clifford. An important biography and criticism is *Rainer Maria Rilke* by E. M. Butler (Cambridge U. P.). *James George Frazer* is a portrait of the author of *The Golden Bough*, the book which has influenced contemporary literature, by his assistant, Angus (Macmillan). *Barrie* is an official life of the late Scottish novelist and playwright by Dennis Mackail (Scribner's). *Sir Richard Burton's Wife* is a record of Lady Burton's marriage by Gene Burton (Knopf). *The Brontës' Web of Childhood* by Fanny Elizabeth Batchford (Columbia) is the most important book on the Brontës since Mrs. Gaskell, a revolutionary interpretation of the Brontës' childhood.

LETTERS AND DIARIES

The two leading books were Simon and Schuster's *Treasury of the World's Great Letters* and *Berlin Diary* by William Shirer (Knopf), a unique source book which had a tremendous reading public. There has been a marked revival of the letter and diary form in the necessity of people to put down eye-witness accounts of the war. It is interesting to note that many are anonymous, as if the events were the important things. The following represent a large output: *Women of Britain*, Letters from England edited by Jan Struther. *They Speak For A Nation* edited by Eve Curie (Doubleday) and others, letters smuggled from Occupied France. *All Gaul is Divided*, letters from Occupied France on the undercover anti-Hitler movement, with a foreword by Elizabeth Morrow (Greystone). *France Speaking* by Robert du Saint Jean, extracts from a diary through 1939-1940 (Dutton). *Letters From Jim*, by the novelist Cecil Roberts, from

France and America during wartime (Macmillan).

The Airmen Speak by men of the R.A.F. selected by Wing Commander Bentley Beaman (Doubleday). *Fishermen at War*, fishing and mine-sweeping, by Leo Walmsley (Doubleday). *War Letters From Britain* edited by Diana Forbes-Robertson and Roger W. Straus, Jr., with a foreword by the collaborator's husband, Vincent Shean (*Current History-Forum*), spontaneous letters from John Gielgud, Ernest Bevin, and others to anonymous recipients, covering every phase of the war. *London Front* comprises letters written to America by the English novelist F. Tennyson Jesse and her husband, the dramatist H. M. Harwood, to friends in America, including Behrman and Alexander Woollcott (Doubleday).

The *Diary and Letters of Josiah Gregg* who wrote a neglected classic called "Commerce of the Prairie," edited by Maurice Garland Fulton (Oklahoma). *Some Letters From Livingstone, 1840-1872*, many not before published, edited by David Chamberlain (Oxford). *The Secret Diary of William Byrd of Westover 1709-1712*, an intimate picture of Virginia life, ed. from the shorthand by Louis B. Wright and Marion Tinling (Richmond: Dietz).

WAR ESSAYS AND JOURNALS

So much has been written in essay form, reporting, etc. about the war by well known writers that it is impossible to be exhaustive. A brief list includes: *The Devil in France*, from the German of Lion Feuchtwanger who spent the summer of 1940 in a concentration camp (Viking). *France, My Country* by Jacques Maritain, an analysis of the disaster (Longmans). *France on Berlin Time*, the Nazi "carpet-baggers" in France by Thomas Kernan (Lippincott). *England Speaks*, a symposium by British authors, A. P. Herbert, E. M. Forster, etc. (Macmillan). *England's Hour* by Verec Britain, a picture of England today (Macmillan). *Country Notes in War Time* by V. Sackville West (Doubleday). *The Nine Days*

Wonder, the story of Dunkirk by John Masefield (Macmillan). *Fighter Pilot* by Paul Richey, a personal record of the campaign in France. *Mansion House of Liberty* by Phyllis Bottome, English war chronicle (Little, Brown). *This is England Today* by Allan Nevins (Scribner's). *The English Are Like That* by Philip Carr (Scribner's), two analyses of the English character. *Civilians Must Fight*, a record of wartime London by Raymond Daniell (Doubleday). *The Oaken Heart*, an English village during the war, by Margery Allingham (Doubleday).

There Stands a Winged Sentry by Margaret Kennedy is a journal of the summer of the fall of Belgium and France (Yale U. P.). *War in the Air* by David Garnett, the novelist who is now in the R.A.F. and reports the fighting (Doubleday). *Sweet Thames, Run Softly*, by Robert Gibbons (Bobbs-Merrill). *My First War*, a journal by Sir Basil Bartlett, through Belgium to Dunkirk (Macmillan). *September to September* by Jacobine Menzies, English family life in wartime (Oxford). *This is London* by Edward E. Murrow, chief of CBS foreign news staff reporting, with introduction by Elmer Davis (Simon, Schuster). *I Saw England* by Ben Robertson, an eye-witness account (Knopf). *Bomber's Moon*, reporting by Negley Farson (Harcourt). *Two Survived*, the true report of the survivors from a ship sunk by a German raider who were on the sea 70 days and finally washed up on an island in the Bahamas, introduction by William McFee (Random House). *They'll Never*

Quit, by Harvey Klemmer, an American in wartime England (Funk). *No Other Road to Freedom*, by Leland Stowe, a reporter who went to Europe as an isolationist and came back as an interventionist (Knopf). Quentin Reynolds found out a great deal about London in his deliberately casual *London Diary* (Random).

Short Day Ago is an account of a German exiled with no country to go to, by Renee Brand (Farrar). *The Darkest Hour* by Leo Lanis, is of the escape of an Austrian journalist from a concentration camp, introduction by Edgar Ansel Mowrer (Houghton Mifflin). *Finland Forever* by Hudson Strode (Harcourt) is the record of his summer in Finland in 1939, with photographs. *Mission to the North* is Florence Jeffrey Harriman's account of her three years as Minister to Norway (Lippincott). *China Shall Rise Again* by Mme. Chiang Kai-Shek, what China will do after reconstruction (Harper). *Life for Life's Sake* is by Richard Aldington, the poet and novelist, with many references to Pound, Eliot, Lawrence, Amy Lowell and Imagism, Wells, etc.

LITERARY AUTOBIOGRAPHY

Newspaper Days is H. L. Mencken's life from 1899 to 1906 on the *Baltimore Herald* (Knopf). *That Day Alone* continues Pierre Van Passen's reminiscences of France (Dial). Eric Gill, the English artist who died in 1940, writes his autobiography. *In The Mills* is Masefield's recollection of his work in a Yonkers factory, his omnivorous reading, his beginning to write (Macmillan).

ENGLISH LANGUAGE AND LITERATURE

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GENERAL

The present survey of American research in the field covered, as formerly, is selective. Many studies concerned with details too technical for

the layman are omitted although they are often of considerable importance to the philologist and the literary historian. A complete list of such contributions will be found in the bibliog-

raphy by A. C. Baugh, M. A. Shaaber, and the author in the Supplement to the *Publications of the Modern Language Association (PMLA)*.¹ The reader should also consult Hardin Craig's "Recent Literature of the English Renaissance" (*SP*), Richmond P. Bond's "English Literature, 1660-1800: A Current Bibliography" (*PQ*), Walter Graham's "The Romantic Movement: A Current Selective and Critical Bibliography" (*ELH*), and the "Victorian Bibliography" (*MP*), compiled by the Victorian research group of the Modern Language Association, all of which, except the first, include foreign as well as American work. H. K. Russell, "Theses for the Year" (*South Atlantic Bull.*) lists M.A. and Ph.D. theses, published and unpublished, in English and the modern languages.

THE ENGLISH LANGUAGE

Among the more general studies in this field may be mentioned Hugh R. Walpole's *Semantics: the Nature of Words and Their Meanings* and Harry A. Deferrari's *Outline of a Theory of Linguistic Change*; the latter attempts to explain linguistic change on the basis of assimilation and reaction to assimilation. In "Odium Philologicum" (*Stanford Stud. in Lang. and Lit.*), Arthur G. Kennedy supplies an account of the verbal wars waged in the nineteenth century on questions of language. Among the more specialized studies may be noted "The Syllabic Phonemes of English" (*Lang.*) by George L. Trager and Bernard Bloch, "Ideograms in English

Writing" (*ibid.*) by William F. Eger-ton, "The Development of Middle English *ȝ* in Early Modern . . . English" (*JEGP*) by Harold Whitehall and Theresa Fein, and "The Allegedly Dead Suffix—*dom* in Modern English" (*PLMA*) by Harold Wentworth. Gertrude E. Noyes has written on "The Development of Cant Lexicography in England, 1566-1785" (*SP*). "Ain't I and Aren't I" are discussed by R. I. McDavid (*Lang.*)

GENERAL LITERATURE

The year saw a number of important studies of the nature and function of literature, of which the following may be noted: Cornelius C. Cunningham's *Literature as a Fine Art; The Intent of the Artist* by Sherwood Anderson, Thornton Wilder, and others; *The Philosophy of Literary Form* by Kenneth Burke (Univ. Louisiana); "Poetry and the Passions Again" by Elmer E. Stoll (*JEGP*); and "Literature and the Search for Truth" by Floyd H. Alpert (*Sewanee Rev.*). Four studies of criticism are *The Art of Literary Criticism* by Paul R. Lieder and Robert Withington; an anthology, *Literary Criticism: Pope to Croce*, prepared by G. W. Wilson and H. H. Clark; *The New Criticism*, a study of the theories of I. A. Richards, T. S. Eliot and others, by John Crowe Ransom; and *The Intent of the Critic*, a symposium by Edmund Wilson, John C. Ransom, Norman Foerster, and W. H. Auden, edited by Donald Stauffer. All scholars will welcome René Wellek's *The Rise of English Literary History and Problems of Literary History*, by Wellek, Norman Foerster, and others (both North Carolina).

In this section also may be noted two studies which cut across several periods of our literary history. James Hutton's "Cupid and the Bee" (*PMLA*) lists translations and imitations, to the end of the eighteenth century, of Theocritus's "Idyll XIX," and of the similar poem by Anacreon. R. A. Gettman's *Turgenev in England and America* is a publication in the University of Illinois *Studies in Language and Literature*.

¹ Periodicals are cited under the following abbreviations, the reference being always to the volume for the year covered by this review: —PMLA, *Publications of the Modern Language Association of America*; MP, *Modern Philology*; MLN, *Modern Language Notes*; MLR, *Modern Language Review*; JEGP, *Journal of English and German Philology*; SP, *Studies in Philology*; PQ, *Philological Quarterly*; ELH, *A Review of English Literary History*; RES, *Review of English Studies*; ELH, *English Literary History*; HLQ, *Huntington Library Quarterly*; SAB, *Shakespeare Association Bulletin*; RR, *Romanic Review*; MLQ, *Modern Language Quarterly*; JHI, *Journal of the History of Ideas*. Titles appearing as theses or in the publication of universities are followed where possible by the name of the university.

OLD ENGLISH LITERATURE (to 1150)

Among the works in this field the most ambitious is Kemp Malone's *Ten Old English Poems, Put into Modern English Alliterative Verse* (Johns Hopkins). Professor Malone has also discussed "Lift—Patterns in Old English Verse" (*ELH*) and "Hygd" (*MLN*), the Geatish queen in *Beowulf*. George K. Anderson's "Notes on the Language of Aelfric's English Pastoral Letters" (*JEGP*) is a discussion of two eleventh century mss. which are suggestive of the development of the Anglo-Saxon language during the transition years. Sherman Kuhn has made another collation of "The Gloss to the Vespasian Psalter" (*ibid.*) and points out errors in the work of earlier studies. A detailed account of the MS. of "The Old English Herbal of Apuleius" is given by George T. Flom (*ibid.*) and "An Old English *Encomium Urbis*" has been studied by Margaret Schlauch (*ibid.*). In "Astrological Prognostications in MS. 775 of the Pierpont Morgan Library," Kurt F. Bühler has described a hitherto unnoted thunder-book (*MLN*). Cornelia C. Coulter finds evidence for the year 859 as "The Date of John the Scot's *Annotationes in Marcianum*" (*Speculum*). All students of this period will find much of human interest in the account of *John Mitchell Kemble and the Brothers Grimm* by Mavin C. Dilkey and Heinrich Schneider.

MIDDLE ENGLISH

A general account of *The Progress of Medieval and Renaissance Studies in the United States* has been supplied by S. Harrison Thomson (Univ. of Colorado). Several studies of medieval life throw light upon the literature of this period. Among these, special mention may be made of John M. Mecklin's *The Passing of the Saint* (Chicago), which is a study of the influence of the medieval conception of the saint upon society; Morton W. Bloomfield's "The Origin of the Concept of the Seven Cardinal Sins" (*Harvard Theol. Rev.*); J. R. Reinhard's "Burning at the Stake in

Medieval Law and Literature" (*Speculum*); and Lee Bowen's "The Topology of Medieval Dedication Rites" (*ibid.*). "The Minstrels at the Court of Edward III," by Clair C. Olson (*PMLA*) collects data on the number, names, compensation, and activities of the court minstrels.

For the literature of the early Middle English period the following articles are of interest: Ernest Jones's "Geoffrey of Monmouth's Account of the Establishment of Episcopacy in Britain" (*JEGP*); R. E. Bennett's "Walter Map's Sadius and Galo" (*Speculum*), which furnishes analogues of a story in the *De Nugis*; and Frank M. Chamber's "Some Legends Concerning Eleanor of Aquitaine" (*ibid.*), which gives an account of the legends of her presence on the the second crusade, her part in the supposed Courts of Love, and her death-bed confession.

In the field of the romance may be mentioned first John J. Parry's "Bibliography of Critical Arthurian Literature for the year 1940" (*MLQ*). Mary E. Griffin's "Cadwalader, Arthur, and Brutus in the Wigmore Manuscript" (*Speculum*) is an account of the holding of Round Tables and other uses of legend for political purposes, especially by Edward I and the Mortimers. Roger S. Loomis discusses various conceptions of Arthur as a king of the Otherworld in "King Arthur and the Antipodes" (*MP*). Bertram Vogel believes that "The Dialect of *Sir Tristrem*" (*JEGP*) is that of a Londoner, not northern, as has heretofore been claimed. Lillian H. Hornstein provides "New Analogues to the *King of Tars*" (*MLR*), points out a folk-lore theme in the motif of the lumpish or abnormal offspring in the same story (*PQ*), and also discusses "The Historical Background of *The King of Tars*" (*Speculum*). In "The Middle English and Old Norse story of Olive" (*PMLA*), H. M. Smyser argues that the Norse is a close translation of the lost Middle English romance of *Olive and Landres*; Henning Larsen's "Olive and Landres" (*JEGP*) furnishes further discussion. A. H. Krappe's "The Maid Freed from

the Gallows" (*Speculum*) is a study of numerous analogues and variants of a ballad-theme.

Passing now to the medieval drama, Mary H. Marshall's "The Dramatic Tradition Established by the Liturgical Plays" (*PLMA*) may first be noted. Also concerned with the complex of factors that contributed to the creation of the miracle play is George R. Coffman's "The Miracle Play: Notes and Queries" (*PQ*). Mandal G. Frampton has studies "The Towneley Harrowing of Hell" (*PMLA*) and "The York Play of Christ Led up to Calvary (Play XXXIV)" (*PQ*). In "Noah's Wife Again" (*PMLA*), Anna J. Mill links the stubbornness of Noah's wife with a widespread tradition representing her corruption by the devil and smuggling of the latter into the ark by a ruse.

Of the literature of the fourteenth century, Piers Plowman has been the subject of two interesting articles—B. F. Huppe's "The Date of the B-text of *Piers Plowman*" (*SP*) and George Sanderlin's "The Character of 'Liberum Arbitrium' in the C-text of *Piers Plowman*" (*MLN*). In "A Note on the Wyclifite Bible Translation" (*Univ. of Texas . . . Studies in English*), E. W. Talbert finds evidence for the existence of an intermediate version between the early and late texts. Three articles reflect the growing interest in the literature of the late Middle English period. Herbert L. Stewart's "Literature and Learning of Five Centuries Ago" (*Queen's Quar.*) is on the cultural level of the fifteenth century. Kurt F. Bühler's "Sir John Paston's *Grete Booke*" (*MLN*) deals with a fifteenth century "best-seller." Zoltan Haraszti, in "The Catholicon, the Golden Legend, and Other Early Books" (*More Books*), provides some data on Caxton.

CHAUCEER

Studies of Chaucer continue to be numerous. Clair C. Olson's "Chaucer and the Music of the Fourteenth Century" (*Speculum*) surveys the music and the musical instruments of Chaucer's day and examines Chau-

cer's allusions to them. "The People in Chaucer's *Troilus*" (*PMLA*), by John S. P. Tatlock, is an interpretation of the characters. In "The Dual Time—Scheme in Chaucer's *Troilus*" (*MLN*), Henry W. Sams points out that the poem contains an actual basic time—scheme of three years, and, concentric with this, an artistic scheme of one year. Leo J. Hankin's "The Apocalypse and Chaucer's *House of Fame*" (*MLN*) is concerned with the indebtedness of the poem to the Book of Revelation.

Close upon the publication in 1940 of the Manly-Rickert text of the *Canterbury Tales* have come three textual studies. Robert K. Root's "The Text of the *Canterbury Tales*" (*SP*) is primarily a review of the Manly-Rickert edition. In "Three Notes on the Text of the *Canterbury Tales*" (*MLN*), Carlton Brown provides clues to the reliability of the groups of mss. Thomas F. Dunn has investigated *The Manuscript Source of Caxton's Second Edition of the Canterbury Tales* (Chicago). Several of the foremost American Chaucerian scholars have contributed to *Sources and Analogues of Chaucer's Canterbury Tales*, edited by W. F. Bryan and Germaine Dempster. Laura H. Loomis, in "Chaucer and the Breton Lays of the Auchinleck MS" (*SP*), traces various features of the Franklin's, Merchant's, and the Wife of Bath's Tales to these lays and argues that Chaucer must have used this ms. In two articles, "The Clerical Status of Chaucer's Alchemist" (*Speculum*) and "The Credentials of Chaucer's Pardoner" (*JEGP*), Marie P. Hamilton argues that the Pardoner and the Canon were modeled upon the Augustinian canons regular. Parallels between the description of Virginia in the Physician's Tale and passages in Vincent of Beauvais' *De Eruditione Filiorum* are pointed out by Karl Young in "The Maidenly Virtues of Chaucer's Virginia" (*Speculum*). Karl E. Elmquist's "An Observation on Chaucer's *Astrolabe*" (*MLN*) is an argument that Chaucer's little treatise was not a private communication to "Lewis" but rather a full-dress literary

work intended for a larger reading public. In "Sixty as a Conventional Number and Other Chauceriana" (*MLQ*), Sister Mary Immaculate includes notes on the Merchant's Tale, the Parson's Tale, and the Pardoner's Tale.

THE SIXTEENTH CENTURY

Early Tudor.—Students of the early Tudor period will be interested in Samuel K. Workman's comparison of "Versions of Skelton, Caxton, and Berners of a Prologue by Diodorus Siculus" (*MLN*). C. R. Thompson has commented on *The Translation of Lucian by Erasmus and Sir Thomas More*. In "The Philosophic Unity of More's *Utopia*" (*SP*) Robert P. Adams relates various phases of the Utopian regimen and polity to the concept of a life ordered by nature. Hoyt H. Hudson examines four "Current English Translations of *The Praise of Folly*" (*PQ*). For the drama of this period, James K. Lowers has pointed out the "High Comedy Elements in Medwall's *Fulgens and Lucrez*" (*ELH*). Kenneth W. Cameron has furnished three studies of the interludes of John Heywood—*Authorship and Sources of "Gentleness and Nobility," The Background of John Heywood's "Witty and Witless,"* and John Heywood's "Play of the Wether." All students of this period will welcome Eva C. Hangen's *Concordance to the Complete Poetical Works of Sir Thomas Wyatt*, which should prove valuable also to the study of the history of the language.

Elizabethan.—Several general studies may be noted first. In "The Two Matters: Classical and Christian in the Renaissance" (*SP*), Arnold Williams emphasizes the place of theology as one of the humanities in this period. Mary C. Randolph has written on "The Medical Concept in English Renaissance Satiric Theory: its Possible Relationship and Implications" (*ibid.*). Carroll Camden's "The Mind's Construction in the Face" (*PQ*) is concerned with physiognomy as one of the pseudo-sciences which appealed to the Renaissance. Two more studies have been added to

the rapidly accumulating accounts of Elizabethan melancholy—Sidney Thomas's "The Elizabethan Idea of Melancholy" (*MLN*), which deals with a treatise by William Perkins, the eminent Puritan divine, and Lawrence Babb's "Melancholy and the Elizabethan Man of Letters" (*HLQ*), an examination of the theory with particular reference to actual writers and to men of letters portrayed in the drama.

Spenser.—As usual, Spenser has been the subject of much investigation. Frederick M. Padelford comments on "Aspects of Spenser's Vocabulary" (*PQ*) and particularly on "Spenser's Use of 'Stour'" (*MLQ*). James L. Shanley has made *A Study of Spenser's Gentleman* (Northwestern). "The Background of Spenser's Attitude toward Women Rulers" (*HLQ*), by James E. Phillips, throws light on one of the much discussed questions of the age. Brice Harris's "The Ape in *Mother Hubbard's Tale*" (*HLQ*) identifies the ape with the younger Cecil. That the poet may have had in mind in constructing his sonnet sequence the neo-Platonic ladder as developed by Italian expositions of the Renaissance is suggested by Edwin Casady in "The Neo-Platonic Ladder in Spenser's *Amoretti*" (*PQ*). In "Spenser and the Serpent of Division" (*SP*), William R. Orwin interprets *The Ruines of Time* as a warning against the civil war which might follow the death of Elizabeth. Grace W. Landrum finds that Spenser, a bad sailor, made frequent use of "Imagery of Water in the *Faerie Queene*" (*ELH*); the same author has noted the "Images in the *Faerie Queene* Drawn from Flora and Fauna" (*SAB*). Interpretations of particular passages in the *Faerie Queene* are offered in Allan H. Gilbert's "The Ladder of Lechery, *F.Q.* III, i, 45" (*MLN*) and in S. M. Blair's "The Succession of Lives in Spenser's Three Sons of Agape" (*MLQ*). "Braggadocchio: Spenser's Legacy to the Character-Writers" (*ibid.*), by John L. Lievsay, contributes to our knowledge of the followers of Spenser. Finally in this sec-

tion may be noted Thomas H. Jameson's "The Machiavellianism of Gabriel Harvey" (*PMLA*), an interpretation of presumptive additions to the *Gratulationes Valdenses* as satire on Alencon and his agents.

Other Non-Dramatic Literature.

—The year has seen relatively few studies of the non-dramatic writings of the heyday of Elizabeth. In "Richard Tarlton and the Earthquake" (*HLQ*), Lily B. Campbell reprints the actor's poem upon the earthquake of 1580. Clare Haward has edited *The Poems of Sir John Davies* from the first editions in the Huntington Library. Here also may be mentioned Phyllis B. Barlett's study of "The Heroes of Chapman's Homer" (*RES*). As for the prose of the period, two studies of Richard Hooker may be noted—Elbert N. S. Thompson's "Richard Hooker among the Controversialists" (*PQ*) and Samuel A. Yoder's "Dispositio in Richard Hooker's 'Laws of Ecclesiastical Polity'" (*Quar. Jour. of Speech*), the latter a study of the structure of the *Laws*.

The Drama.—This year, as usual, the bulk of Elizabethan scholarship is concerned with the drama and with Shakespeare. Alfred Harbage's *Shakespeare's Audience* (Columbia) is a careful study of the nature, intellectual capacity, and taste of the average Elizabethan audience. In "That Undiscovered Country" (*PQ*), Madeleine Doran considers the effect of the supernatural upon Elizabethan audiences as contrasted with audiences today. Waldo F. McNeir's "Gayton on Elizabethan Acting" (*PMLA*) supplements Harbage's essay of 1940 on the formal quality of Elizabethan acting. In "The Physiological Conception of Love in the Elizabethan and Early Stuart Drama" (*ibid.*), Lawrence Babb points out that, in many plays, erotic love is represented not as an ennobling longing of the soul but as an ignoble physical impulse.

Turning to studies of particular dramatists, it may be noted that, to his series of *Elizabethan Bibliographies*, Samuel Tannenbaum has

added bibliographies of John Ford, John Webster, and Thomas Nashe. Eleanor G. Clark's *Raleigh and Marlowe: A Study in Elizabethan Fustian* (Fordham) emphasizes the topical elements in the drama. "Background's for Marlowe's Atheist Lecture" (*PQ*), by Paul H. Kocher, is an analysis of Marlowe's argument showing its careful reasoning and serious thought. In another article, "François Hotman and Marlowe's *The Massacre at Paris*" (*PMLA*), Kocher prints parallel passages from the play and from the English translation of *De furoribus gallicis*, attributed to Hotman. Don C. Allen discusses "Renaissance Remedies for Fortune: Marlowe and the *Fortunate*" (*SP*) and sees in Tamburlaine an illustration of Pontano's concept of the *fortunatus*, the favorite of the fortune. In "Tamburlaine the Scourge of God" (*PMLA*), Roy W. Battenhouse argues that *Tamburlaine* exemplifies the idea that war and tyranny are sent to punish sin and therefore questions the usual assumption regarding Marlowe's atheism. T. M. Parrott's "Comedy in the Court Masque: A Study of Ben Jonson's Contribution" (*PQ*) passes in review Jonson's masques, noting the growth in elements of comedy and satire.

For the somewhat later period, Gerald E. Bentley has written *The Jacobean and Caroline Stage, Dramatic Companies and Players* (Oxford). William C. Powell has supplied "A Note on the Stage History of Beaumont and Fletcher's *Love's Pilgrimage* and *The Chances*" (*MLN*). In "John Ford and Elizabethan Tragedy" (*PQ*), G. F. Sensabaugh develops the idea that Ford's tragedies as conflicts between physical impulses on the one hand and the laws of society on the other grow out of contemporary doctrines of science and Henrietta Maria's love cult.

SHAKESPEARE

Outstanding among the year's contributions to Shakespeare scholarship is B. Roland Lewis's *The Shakespeare Documents: Facsimiles, Transliterations, Translations, and Commentary* (Stanford). Mr. Shakespeare of the

Globe, by Frayne Williams, is another "life and works" study. In *Repetition in Shakespeare's Plays* (Princeton), Paul V. Kreider analyzes the mechanical aspects of repetition of plot devices and character, and of thought, phrasing, and imagery. Hereward T. Price's "Shakespeare as a Critic" (PQ) interprets various passages as parody and thus as implied criticism of contemporary literary practice. Brents Stirling, in "Anti-Democracy in Shakespeare" (MLQ), cites evidence to show the background of political uneasiness behind Shakespeare's attitude towards the mob. In "The Lunatic, the Lover, and the Poet" (SAB), M. Elwood Smith points out the unsentimental clarity of vision with which Shakespeare regarded his characters. Kenneth O. Myrick has written on "The Theme of Damnation in Shakespeare Tragedy" (SP); Thomas P. Harrison on "Aspects of Primitivism in Shakespeare and Spenser" (Univ. of Texas . . . *Studies in English*); Curtis B. Watson on "Shakespeare's Dukes" (SAB); and Virgil K. Whitaker on "Shakespeare's Use of His Sources" (PQ). Alfred Harbage describes "A Contemporary Attack upon Shakespeare" (SAB). In R. C. Bald's "Shakespeare on the Stage in Restoration Dublin" (PMLA) will be found an account of prompt copies of eight of Shakespeare's plays. Various aspects of foreign interest in Shakespeare are treated in the following—Toyada Minoru's *Shakespeare in Japan*, Joseph G. Fucilla's "Shakespeare in Italian Criticism" (PQ), and Cyril Bryner's "Shakespeare among the Slavs" (ELH).

As to the individual plays, the fact may first be mentioned that *Twelfth Night*, *Much Ado*, *Othello*, and *Antony and Cleopatra* were edited separately by the late Professor Kittredge. Sallie Sewell has made a study of "The Relation between *The Merry Wives of Windsor* and Jonson's *Every Man in his Humour*" (SAB), and John A. Quinn has examined "The Letter Device in the First Act of *The Two Gentlemen of Verona*" (Univ. of Texas . . . *Studies in Eng-*

lish). Samuel A. Tannenbaum has prepared a bibliography for *The Merchant of Venice*. In *The Taming of a Shrew* (PQ) Henry D. Gray argues that "A Shrew" is derived, through a pirate who took the part of the tailor, from an early form of *The Shrew*. John Wilcox's "Putting Jaques into *As You Like It*" (MLR) offers plausible grounds for thinking that Jaques was added or largely developed after the play was written, possibly to give Burbage a significant part if he had proved too old to act the youthful Orlando. John W. Draper, in "Shakespeare's Orlando Innamorato" (MLQ), analyzes the character of Orlando in terms of the 'sanguine humor'; elsewhere, Draper has made similar analyses of the character of Duncan and Macbeth. C. T. Prouty has written on "George Whetstone, Peter Beverly, and the Sources of *Much Ado about Nothing*" (SP). Leo Kirschbaum, in "The True Text of *King Lear*" (SAB), argues that the quarto is a memorial corruption of the folio and illustrates the inconsistencies of the *textus receptus*. Of many studies of *Hamlet*, space permits the mention only of Roberta Morgan's "Some Stoic Lines in *Hamlet* and the Problem of Interpretation" (PQ), N. B. Allen's "A Note on Wilson's *Hamlet*" (SAB), and John E. Hankin's *The Character of Hamlet and Other Essays* (North Carolina).

For Shakespeare's non-dramatic poems, Rufus Putney has written "*Venus and Adonis*: Amour with Humor" (PQ). E. P. Kuhl's "Shakespeare's *Rape of Lucrece*" (PQ) traces the treatment of the theme to show its political implications. "Analogues of Shakespeare's Sonnets 153-4" (MP), by James Hutton, is concerned with the history of the theme before Shakespeare.

SEVENTEENTH CENTURY

General.—Of the many studies of seventeenth century writers it will be possible to mention only those of larger import. An interesting general study is Douglas Bush's "Two Roads to Truth: Science and Religion in the Early Seventeenth Century"

(*ELH*), which was first delivered as a lecture before the Tudor and Stuart Club of the Johns Hopkins University. Lawrence M. Price has written on "Holland as a Mediator of English-German Literary Influence in the Seventeenth and Eighteenth Centuries" (*MLQ*). The year also saw the publication of two important books on the Authorized Version of the Bible. David Daiches' *The King James Version of the English Bible* (Chicago) is an account of the development of this version with special reference to the Hebrew tradition. Charles C. Butterworth's *The Literary Lineage of the King James Bible* (Pennsylvania) provides the fullest account yet written of the English versions of the Bible and traces specifically the influence of earlier English versions upon the literary style of the translation of 1611. A related study, although not specifically concerned with English literature, is Israel Baroway's "The Lyre of David: A Further Study in Renaissance Interpretation of Biblical Form" (*ELH*).

Donne and Other Poets.—The Facsimile Text Society has reproduced Donne's *Ignatius his Conclave*. In "The Myth of John Donne the Rake" (*PQ*) Allen R. Benham gives reasons for doubting the view of Edmund Gosse that Donne's early life was wild and his last 16 years one long repentance. Roger E. Bennett's "*Donne's Letters to Several Persons of Honour*" (*PMLA*) identifies the addresses of various letters and discusses the sources of the text and John Donne Jr.'s arrangement of the collection. In "Donne's Suicides" (*MLN*), Don C. Allen adduces evidence to show that Donne's information concerning the suicides mentioned in his writings was derived from Renaissance Compendia, and suggests that Donne was probably not so great a classical student as is usually supposed. Other articles treating of early 17th century poets are Gerald E. Bentley's "Seventeenth-Century Allusions to Ben Jonson" (*HLQ*), Rhodes Dunlop's "Some Unpublished Verses by Thomas Ran-

dolph" (*MLN*), Merritt Y. Hughes's "The Theme of Pre-Existence and Infancy in *The Retreate*" (*PQ*), and Josephine W. Bennett's "Early Texts of Two of Raleigh's Poems from a Huntington Library Manuscript" (*HLQ*). The poets of the latter part of the century are discussed in several articles. Cornell M. Dowlin's "Plot as an Essential in Poetry" (*RES*) considers Hobbes' indebtedness to Bacon, and examines their views on the necessity for plot in poetry in the light of Renaissance interpretations of Aristotle. In Helene M. Hooker's "Charles Montague's Reply to *The Hind and the Panther*" (*ELH*) is printed a hitherto unpublished poetic dialogue by Montagu, together with an analysis of the theological concepts involved.

Prose Writers.—Lambert Ennis, in an article on "Margaret Bellasys' 'Characterisms of Vices'" (*PMLA*), has made a study of a ms. collection of 'characters' evidently the work of Margaret Bellasys. Laurence Stapleton has traced the resemblances in the political ideas of "Halifax and Raleigh" (*JHI*). Writing on "Sir Francis Bacon's Theory of Civil History Writing" (*ELH*), Leonard F. Dean suggests that Bacon was the foremost English advocate of the Polybian theory, which regarded history as a form of didactic literature dealing with the art of political administration. A biographical note of interest will be found in Arthur M. Coon's "Izaak Walton a Stationer?" (*MLN*). Harry G. Plum gives an account of "The English Religious Restoration, 1660-1665" (*PQ*). Of interest to the student of the philosophical writers are T. G. Steffan's "Jeremy Taylor's Criticism of Abstract Speculations" (Univ. of Texas . . . *Studies in English*) and Willmoore Kendall's *John Locke and the Doctrine of Majority-rule* (Illinois).

Milton.—Harris H. Fletcher has edited *The Complete Poetical Works of John Milton*, a new text based upon the general plan of the Cambridge Edition edited by William Vaughan Moody in 1899. In "John Milton, Scrivener, The Temples of Stowe, and

Sir John Lenthall" (*HLQ*), J. Milton French prints from mss. in the Huntington library three documents which throw light on the business affairs of the poet's father. William R. Parker has written "Above All Libraries: James Milton's Relations with his Earliest Publishers" (Princeton Univ. *Library Chron.*). Z. S. Fink's "Milton and the Theory of Climatic Influence" (*MLQ*) traces through various stages of the poet's career the idea that northern climates had a deleterious effect on the human mind. Arthur Baker, in "The Pattern of Milton's *Nativity Ode*" (*Univ. of Toronto Qu.*), finds in the *Ode* the first sign of Milton's conviction of the sanctity of his poetical vocation, and believes that its effects were similar to those of the Puritan conversion.

Among many studies of *Paradise Lost*, four may be noted. Grant McColley's "Milton's Battle in Heaven and Rupert of Saint Heribert" (*Speculum*) points out parallels which suggest that Milton was acquainted with the twelfth century theologian. The same author's "Milton and Moses Bar-Cepha" (*SP*) calls attention to certain unconventional concepts common to *Paradise Lost* and the *Commentarius de Paradiso* of Bar-Cepha. Arnold Williams has written on "Renaissance Commentaries on Genesis and Some Elements of the Theology of *Paradise Lost*" (*PMLA*). In "Milton's Use of 'Begot' in *Paradise Lost*, V, 603" (*SP*), Maurice Kelley interprets *begot* as meaning "invested with kingship" and accounts for correspondences and discrepancies between *Paradise Lost* and *De Doctrina Christiana*. Z. S. Fink has written on "The Political Implication of *Paradise Regained*," which he believes indicate Milton's lack of faith in dictatorship as it was conceived in the seventeenth century.

Warner G. Rice's "A Note on Areopagitica" (*JEGP*) attempts to correct the prevalent notion of Milton's ideas by pointing out that Milton believed that bad books, like bad men, should be restrained. From official French records, J. Milton French has given an account of "The Burning of Mil-

ton's *Defansio* in France" (*MLN*). Don M. Wolfe's *Milton in the Puritan Revolution* is an interpretive study of Milton's social ideas.

Restoration Drama.—Clarence S. Paine has prepared *The Comedy of Manners (1660-1700): A Reference Guide to the Comedy of the Restoration*. James M. Osborn's "Macdonald's Bibliography of Dryden: Annotated Check List of Selected American Libraries" (*MP*) gives a list of the holdings of ten American libraries, with addition to and corrections of Macdonald's data. John C. Hodges has written *William Congreve the Man: a Biography from New Sources*. In "The Unconventional Heroic Plays of Nathaniel Lee" (*Univ. of Texas . . . Studies in English*), Frances Barbour argues that Lee's plays before 1679 contrast with the usual sympathy for the doctrine of the divine right of kings.

EIGHTEENTH CENTURY

Poetry.—There have been relatively few studies of the poetry of the eighteenth century. Rae Blanchard's "Pope's 'Ode for Music on St. Cecilia's day'" (*ELH*) is concerned with the question of the date of composition. In "Early Warburton or Late Warburton?" (*Univ. of Texas . . . Studies in English*), R. H. Griffith traces variants in a passage of Pope's *Essay on Criticism* to Warburton's meddling. Louella F. Norwood, in "The Authenticity of Smollett's *Ode to Independence*" (*RES*), describes the circumstances attending the posthumous publication of the *Ode*. Richard C. Boys has edited John Dyer's *Grongier Hill*, with introduction and notes. Robert E. Brittain has reprinted, from Dodsley's *Museum* (1746), "An Early Model for Smart's *A Song of David*" (*PMLA*). Lodwick Hartley's "Cowper and Mme. Guyon: additional notes" (*PMLA*) throws light on the relation of Cowper's religious enthusiasm to his madness. "Charlotte Brooke's *Reliques of Irish Poetry* and the Ossianic Controversy" (*Univ. of Texas . . . Studies in English*) is a study by Kenneth F. Gantz of a phase of the controversy over

Macpherson's sources. Philip Hofer and John T. Winterich have printed in color for the first time William Blake's illustrations to *Paradise Lost*, and C. H. Baker has made an interesting study of "The Sources of Blake's Pictorial Expression" (*HLQ*). Wilbur H. Stone's account of "The History of Little Goody Two-shoes" (*Proc. of the Amer. Antiquarian Soc.*) contains a bibliography.

Prose.—The most considerable general study in this field is Donald A. Stauffer's *The Art of Biography in Eighteenth Century England* (Princeton); a second volume provides a bibliographical supplement. Hans H. Andersen's "The Paradox of Trade and Morality in Defoe" (*MP*) offers an explanation of the contradictions between Defoe's economic principles and his ethical beliefs. In "Defoe and the Eighteenth Century Pamphlets on London" (*PQ*), John R. Moore points out borrowings from one another in several of the satirical pamphlets purporting to describe London. Professor Moore has also given us two articles on Swift—"A New Source for *Gulliver's Travels*" (*SP*) and "The Geography of *Gulliver's Travels*" (*JEGP*). Joseph Manch has written on *Jonathan Swift and Women* (Buffalo). George R. Potter's "Swift and Natural Science" (*PQ*) surveys Swift's knowledge and assesses the spirit of his satire and criticism of scientific activity. An edition of *The Letters of Joseph Addison* has been prepared by Walter Graham.

The Prose Style of Samuel Johnson has been the subject of an investigation by W. K. Wimsatt (Yale). Frederick A. Pottle considers "The Dark Hints of Sir John Hawkins and Boswell" (*MLN*) concerning the sexual irregularities of Johnson adumbrated in Boswell's *Life*. Dixon Wecter has published for the first time three letters of "Dr. Johnson, Mrs. Thrale, and Boswell" (*ibid.*), and James L. Clifford has published a biography of Hester Lynch Piozzi (*Mrs. Thrale*). During the year there were four illuminating articles concerning Hume. Ernest G. Mossner's "An Apology for David Hume, Historian"

(*PMLA*) and "Was Hume a Tory Historian?" (*JHI*) deal with various aspects of Hume's *History*. In "Montesquieu and Hume" (*MLQ*), Roger B. Oake demonstrates Hume's indebtedness to the French writer. Ralph W. Church discussed "Hume's Theory of Philosophical Relations" (*Philosophical Rev.*). J. E. Norton compiled *A Bibliography of the Works of Edward Gibbon*, while Moorhouse F. Millar wrote on "Burke and the Moral Basis of Political Liberty" (*Thought*). From Walpole's unpublished notebooks, Clyde S. Kilby garnered material for his "Horace Walpole on Shakespeare" (*SP*).

Novelists.—Several studies of the novelists of the eighteenth century may be mentioned. Philip B. Gove has traced *The Imaginary Voyage in Prose Fiction* (Columbia). Wylie Sypher's "The African Prince in London" (*JHI*) describes several literary treatments of visits to London by Negroes of high rank. Florence M. Hilbish's *Charlotte Smith, Poet and Novelist* (Pennsylvania) is a biographical and critical account of a minor writer. Louis L. Martz, in "Smollett and the Expedition to Carthegena" (*PMLA*), concludes that the account of this voyage in *Roderick Random* is not autobiographical. The same writer has commented on "Tobias Smollett and the *Universal History*" (*MLN*). An interesting study of the technique of a novelist is William R. Irwin's *The Making of Jonathan Wild, a Study in the Literary Method of Henry Fielding* (Columbia). Irwin's "An Attack on John Fielding" (*MLN*) describes an anonymous pamphlet lampooning the novelist's blind half-brother. Howard P. Vincent, in "Henry Fielding in Prison" (*MLR*), calls attention to the fact that a rare pamphlet of 1740 records an occasion in which Sir Robert Walpole secured Fielding's release from prison.

NINETEENTH CENTURY

The Essayists.—Varley Lang, in "The Character in the Elia Essays" (*MLN*), argues that the backbone of

Lamb's essays is character drawing. "Hazlitt's Criticism and Greek Sculpture" (*JHI*), by Stephen A. Larrabee, deals with the essayist's interest in sculpture, particularly in the Elgin Marbles, and its influence upon his critical ideas. A study of the second of the three articles on Wordsworth which De Quincey wrote in 1839 has been made by John E. Wells in "De Quincey and *The Prelude* in 1839" (*PQ*). "Some De Quincey Manuscripts" (*ELH*), by Claude E. Jones, describes some hitherto unnoted letters and prints a short essay on "Shakespeare and Wordsworth." Malcolm Elwin's *Savage Landor* is based upon voluminous correspondence and a great deal of unpublished material. R. H. Super describes an "Extraordinary Action for Libel—Yescombe vs. Landor" (*PMLA*), and R. F. Metzendorf contributes "Addendum: A New Landorian Manuscript" (*ibid.*) pertaining to the same suit. Hill Shine has written *Carlyle and the Saint-Simonians: The Concept of Historical Periodicity*. In "Jeffrey: Mutilator of Carlyle's 'Burns'?" (*PMLA*), Maxwell H. Goldberg deprecates extreme statements of violence done Carlyle's script. William Charvat has given an account of "Francis Jeffrey in America" (*New England Quar.*). In *John Sterling, a Representative Victorian* (Wellesley), Anne K. Tuell has made a study, from unpublished sources, of a friend of Carlyle and Emerson. Leslie A. Marchand's *The Athenaeum, a Mirror of Victorian Culture* gives particular attention to this periodical's fight for independent literary criticism and its reflection on Victorian tastes. A reviewer for the *London Times* is the subject of Francis X. Roellinger's "E. S. Dallas: A Mid-Victorian Critic of Individualism" (*PQ*). Gaylord C. LeRoy's "Richard Holt Hutton" (*PLMA*) is an appraisal of Hutton's role in the controversy over science and religion and of his literary criticism.

The Romantic Poets.—Hoxie N. Fairchild's "Romanticism and the Religious Revival in England" (*JHI*) takes the unusual view that, from 1833, the Revival has been a faith

which stands in entire opposition to the romantic spirit. There is a timely interest in "The Coast of France how near! 'French Invasion and English Literature, 1793-1805'" (*So. Atl. Qu.*), an account by Arthur P. Hudson and Virginia Mary of poems inspired by the threat of invasion. George Sanderlin has compiled "A Bibliography of English Sonnets, 1800-1850" (*ELH*). David H. Bishop has written on "The Origin of Wordsworth's *Prelude*, and the Composition of Books I and II" (*SP*); and Douglas R. Angus on "The Relationship of Wordsworth's *Ode on the Intimations of Immortality* to Ruskin's Theory of the Infinite in Art" (*MLR*). "The Controversy over Southey's *Wat Tyler*" (*SP*) has been discussed by Frank T. Hoadley. *France on Byron* (Pennsylvania) by William J. Phillips is a study of Byron's French critics, while David V. Erdman's "Lord Byron and the Genteel Reformers" (*PMLA*) is an account of some of Byron's political activities in the House of Lords. The year saw the publication of an unusual number of articles on Shelley; space will permit the mention only of the following: Kenneth N. Cameron's "A Major Source of *The Revolt of Islam*" (*PMLA*); Carlos Baker's "Spenser, The Eighteenth Century, and *Queen Mab*" (*MLQ*); David L. Clark's "Literary Sources of Shelley's *The Witch of Atlas*." I. Spenser and *The Witch of Atlas*. II. What was Shelley's Indebtedness to Keats?" (*PMLA*); Walter F. Wright's "Shelley's Failure in *Charles I*" (*ELH*); and James A. Notopoulos's "Shelley's Translation of *Ion* of Plato" (*MLR*) and "Notes on the Text of Shelley's Translations from Plato" (*MLN*).

The Victorian Poets.—Lafcadio Hearn's *Lectures on Tennyson* have been compiled by Shigetsugi Kishi, a student of Hearn's at the University of Tokio. Howard F. Lowry's *Matthew Arnold and the Modern Spirit* was an inaugural lecture at Princeton University. Baylor University has published *Baylor's Old Yellow Manuscripts. . . . Being Baylor University's Browning Interests, Series XII.*

Robert E. Cowan has written *Robert Browning: An Essay*. A modern critical note is sounded in "Browning's *Sordello* and Jung: Browning's *Sordello* in the Light of Jung's Theory of Types" (*PMLA*) by Stewart W. Holmes. Paul A. Cundiff has written on "The Dating of Browning's Conception of the Plan of *The Ring and the Book* (*SP*), Cornelia M. Smith on "Proverb Lore in *The Ring and the Book*" (*PMLA*), and Frederic E. Faverty on "The Source of the Jules-Phene Episode in *Pippa Passes*" (*SP*). A less solemn theme is treated by S. A. Nock in "*Lacrimae Nugarum*, Edward Lear of the Nonsense Verses" (*Sewanee Rev.*).

The later Victorian poets are represented by Paul F. Baum's "The Bancroft Manuscripts of Dante Gabriel Rossetti" (*MP*) and Geoffrey B. Riddehough's "William Morris's Translation of the *Odyssey*" (*JEGP*), the latter being concerned with Morris's diction and his indebtedness to Butcher and Lang's translation.

Novelists.—During 1941 relatively few scholars turned their attention to the novelists. John R. Moore's "Defoe and Scott" (*PMLA*) deals with Scott's services to Defoe's reputation and the influence of Defoe on Scott's writings. In "The Authorship of *Whitehall*, 1827" (*MLN*), Ralph M. Wardle finds evidence of the hand of Lockhart in this burlesque novel, which is usually attributed to Magoun. John W. Dodds has written *Thackeray: A Critical Portrait*, and in "Thackeray as a Satirist Previous to *Vanity Fair*" (*MLQ*), has made a study of the satiric elements in the 'prentice work of Thackeray's early journalism'; W. C. Pacey's study of "Balzac and Thackeray" (*MLR*) gives emphasis to the influence of the French novelist on the English. Emerson G. Sutcliffe has written on "Psychological Presentation in Reade's Novels" (*SP*) and finds that, although Reade's methods were in general elementary and sensational, he toyed at intervals with psychological analysis in the manner of George Eliot. In "Additions to the Nonesuch Edition of Dickens' Letters" (*HLQ*), Franklin P. Rolfe

prints miscellaneous letters now in the Huntington collection. Finally may be noted two articles on Samuel Butler—Lee E. Holt's "Samuel Butler and his Victorian Critics" (*ELH*) which is an account of the almost unanimously adverse criticism in contemporary reviews, and Nevin Dilworth's "The Second Passing of Samuel Butler" (*So. Atlantic Qu.*) which traces the decline of Butler's popularity.

CONTEMPORARY

Rica Brenner has written biographical sketches of nine modern British and American poets in *Poets of Our Time*. Andrew J. Green has interpreted "Bridges' Odes for Music" (*Sewanee Rev.*) partly in musical terms as set forth in Bridges's essay "The Musical Setting of Poetry." Theodore G. Ehrsam's *A Bibliography of Alfred Edward Housman* includes biographical and critical writings on Housman as well as the poet's own works.

In the field of drama, Wilbur D. Dunkel has prepared *Sir Arthur Pinero: A Critical Biography with Letters* (Chicago). Winfred Smith has written "Bernard Shaw and his Critics (1892-1938)" (*Poet Lore*), and Clifford W. Montague has made a study of "William Somerset Maugham—Dramatist" (*ibid.*) "Sean O'Casey" (*So. Atlantic Qu.*) is the subject of an essay by Homer E. Woodbridge. *The Virginia Quarterly Review*, in a supplement, has printed *The Merry-go-round*, a five-act play, hitherto unpublished, of D. H. Lawrence.

Carl J. Weber continues his studies of the novels of Hardy with "Ainsworth and Thomas Hardy" (*RES*), an account of Hardy's early fondness for Ainsworth's romance and their influence on Hardy's work. In "Another Reading of *The Turn of the Screw*" (*MLN*), N. B. Fagin finds in Henry James's novelette an allegory dramatizing the conflict between Good and Evil. Edwin B. Burgum's "*Ulysses* and the Impasse of Individualism" (*Virginia Qu. Rev.*) interprets Joyce's novel as realistic. R. W. Whidden has commented on "J. B. Priestley and his Novels" (*Queen's Qu.*).

GERMANIC LANGUAGES AND LITERATURES

By F. W. KAUFMANN
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GENERAL

It is a pleasure to report that the great difficulties in obtaining material from Germany and the Scandinavian countries have not affected the production in this field and that the philosophical approach to literary problems has made considerable progress.

LINGUISTICS

In an article on "Dialektgeographie und Textkritik" (*PMLA*)* O. Springer reviews the tendencies in editing Middle High German texts and examines the possibility of applying the findings of dialect geography to editing and determining the place of a text's origin.

In "The Verschärfung in Germanic" (*L*), H. L. Smith assumes that Germanic Verschärfung was due to the Indo-European voiceless semivowels *h_j* and *h_w* with an immediately following accent. These semivowels resulted from an earlier laryngeal consonant.

O. Springer reexamines the relation between German and West-Germanic (*GR*) and refutes Wrede's theory which claims that West-Germanic from the North Sea to the Alps originally was largely Anglo-Frisian. He advocates, however, that linguists take Low German with Anglo-Frisian into a more closely related group over against High German, instead of the traditional grouping of High German with Low German against Frisian and Anglosaxon.

M. H. Roberts, "The Indo-European Accent in Swedish" (*JEGP*), explains the Swedish compound accent as a combination of the Indo-Euro-

pean musical accent and the Germanic dynamic root accent. The musical accent persists in Swedish in the form of a higher pitch striking the last syllable which has a full-grade vocalism; in Norwegian it appears on the final syllable without exception.

R. H. Weidman, "Nominal Compounds in Middle High German" (*JEGP*), relates the origin of the syntactic genitive compound to the position of the genitive before the qualified noun and attributes the decline of the organic formation of such compounds in New High German to the general establishment of postposition in Early New High German.

LITERATURE AND ANALYSIS

W. Richter, "Von der Literatur zur Literaturgeschichte" (*MfdU*), surveys the different approaches to literature, critically analyzes the merits and demerits of the philological, the esthetic, and the philosophical schools, and demands a revival of literary research which should stress historical continuity and development, based on a philosophical interpretation of the historical process.

EARLY LITERATURE

A. Schirokauer's *Der zweite Merseburger Zauberspruch* (Corona) attempts to clarify some of the most disputed points in the magic poem. The author identifies Phol with Baldere's volo and with the god Baldur himself, so that the accident occurs to the god and not to his horse; by this interpretation he further restores the magic triad throughout, and even the structure of the work becomes tripartite.

In *Hohe Minne bei Reinmar von Hagenau: Minnseangs Frühling 176, 5* (Corona), H. W. Nordmeyer refutes the argument raised by Carl von Kraus against Reinmar's authorship

* Abbreviations: Corona = Duke University Press, Durham, N. C.; GR = *Germanic Review*; JEGP = *Journal of English and Germanic Philology*; L = *Language*; MfdU = *Monatshefte für deutschen Unterricht*; MLN = *Modern Language Notes*; MLQ = *Modern Language Quarterly*; PMLA = *Publications of the Modern Language Association*.

of the poem and, by re-interpreting the text, places the poem among Reinmar's most perfect creations, both in technique and in idea.

E. A. Philippson, "Der Ackermann aus Böhmen" (*MLQ*) critically reviews recent research on Johann von Saaz in order to decide the question of the Renaissance spirit with regard to the contents of the dialogue and the author's humanistic ambitions.

A. E. Zucker translates *The Redentin Easter Play* (Columbia Univ. Press) from the Low German of the 15th century.

F. C. Sell publishes the Pritschmeister poem *Ein Lobspruch von eim Schiessen zu Augspurg 1509* (Corona). In his comments the editor refutes the generally accepted view that this type of poetry had its origin in the heraldic poetry or the poems written in praise of cities; instead he attributes the blending of these genres with the Pritschmeister type to Lienhart Flechsel who wrote about half a century later.

C. H. Bell contributes to the studies on Meistergesang by an article "On the Authorship of the Comedi von den Crocodil Stechen zu Nürnberg" (*GR*), revealing Georg Hager as the most probable author of the comedy.

EIGHTEENTH CENTURY

J. W. Eaton, "Bodmer and Breitinger and European Literary Theory" (*MfdU*), relates the emphasis on imaginary creation and their rejection of stereotyped literary patterns and characters to the influence of the Italians Calepio, Gravina, and Muratori, the French Dubos, and the English Shaftesbury and Addison.

H. M. Wolff shows in "Mösers religiöse Anschauungen und die Aufklärung" (*GR*) how Möser subordinates religion to the interest of the state and for merely political reasons defends the orthodox belief as the best method to control the masses as well as to protect them against the outgrowth of despotism. On the other hand, Möser expects the intelligent individual to be a deist or an atheist.

In an article "Zur Bedeutung Bat-

teux's für Lenz" (*MLN*), the same author shows that Lenz, who began as an opponent of Batteux's esthetic theory, ended by adopting all its major features because he had to admit that his own naturalistic drama had poetic tendencies reaching beyond the confines of the mere imitation of nature.

GOETHE AND SCHILLER

C. F. Schreiber edited a catalogue of *Goethe's Works with the Exception of Faust* (Yale Univ.), compiled by members of the Yale Library staff and supplied by the editor with introduction, a biographical sketch of the Goetheana collector, William A. Speck, and literary notes. The principle of Schreiber's arrangement is "to bring together all the materials relating to a given Goethe work; then all that has been done with it in the way of criticism, translation, illustration, musical composition, dramatization, and parody."

A. Hellersberg-Wendriner's "Soziologischer Wandel im Weltbild Goethe's" (*PMLA*) analyzes Goethe's attitude toward the problem of individual and society on the basis of *Wilhelm Meister*: Goethe's individualism was constructive enough to sacrifice the individual's claims to the demands of society, realizing that the highest form of individualism can be attained only in the community of man.

A. F. Zieglschmid's "Zur Quelle von Goethe's *Faust*, II, Akt 5:" Bergschluchten (*JEGP*) provides evidence that Mount Athos served as the prototype for the scenic arrangement of *Faust's* ascent to heaven, and that the Athos rules which demand that a novice, a full monk, and an elder occupy one cell may have influenced Goethe's conception of Pater Profundus, Pater Seraphicus, and Doctor Marianus.

S. Flygt's "Harzreise im Winter" (*GR*) analyzes the ode by placing it in its relation to Goethe's entire lyric production up to the date of his trip through the Harz. He concludes that the poem is a rhapsody on the pain

and comfort of love interwoven with Goethe's impressions on this escape into nature.

In "Das Verhältnis von Tragik und Erhabenheit in Schiller's" (*GR*) this reviewer attempts to prove that Schiller's conception of the sublime does not eliminate the tragic element, but presupposes and retains it as an essential trait of heroic idealism.

W. Liepe, "Friedrich Schiller und die Kulturphilosophie des 18. Jahrhunderts" (*GR*) bases his interpretation of *Die Jungfrau von Orleans* on the philosophy of history as it was developed by Rousseau, Lessing, Mendelssohn, Iselin, Kant, and by Schiller himself in the philosophical essays written before the play.

NINETEENTH CENTURY

A. Gode-von Aesch's book, *Natural Science in German Romanticism* (Columbia Univ. Press) is based on the observation that romantic philosophy determines both science and literature of the early romantic period. Both continue the 18th c. tendency of integrating man with the order of things. They agree in their attempts to spiritualize nature, in their conception of time as unbroken continuity, and in their organic interpretation of infinite nature. Thus the author explains the cosmic character of early romantic literature and its quest for a modern mythos, as well as its failure to complete the universal poem of the world spirit which it attempted.

J. D. Workman's "The Significance of the Taugenichts for Eichendorff" (*MfdU*) reinterprets Eichendorff's *Novelle* on the basis of the poet's philosophy as an expression of Eichendorff's ideal, the wanderer through life on a spiritual plane, as contrasted with an environment too much concerned with material welfare. This author also discerns the beginnings of the literary Biedermeier, a tendency to reconcile one's self with the limitations of bourgeois existence.

G. Rathje, "Literary and Social Significance of the Satire in Karl Gutzkow's *Blasedow und seine Söhne*" (*GR*), re-evaluates Gutzkow's first novel, refuting the one-sided inter-

pretation it had received since it first appeared.

Under the title of *Theodor Storm und Ferdinand Tönnies* (*MfdU*) H. Meyer edits the correspondence between the poet and the sociologist Tönnies.

W. Paulsen, "Von Stifter zu Rilke" (*MfdU*) investigates the complete change in the evaluation of the Austrian cultural inheritance in the two poets. Stifter is rooted in the Austria of the Restoration; he believes in the authority of State and Church, man's complete rootedness in nature, and progress in this world. Rilke withdraws from society into decadent self-contemplation and the esthetic form, and an entirely subjective mysticism, in which death is the predominant factor.

T. M. Campbell, "Nietzsche's *Die Geburt der Tragödie* and Richard Wagner" (*GR*) analyzes Nietzsche's work which usually is taken to be written in defense and praise of Wagner. He finds that Nietzsche developed away from Wagner before he gave his essay its final form and that he looked to a future, i.e., beyond Wagner, for the fulfillment of his ideal, the tragic union between the Apollinian and the Dionysian spirit.

In an article, "Nietzsche-Wagner, to January, 1872" (*PMLA*), the same author studies Nietzsche's opinion of Wagner's music-dramas to the time when he wrote the final version of *Die Geburt der Tragödie aus dem Geiste der Musik*. He demonstrates that, at that time, Nietzsche had given up Wagner as the chief hope of tragic renaissance. He had rejected Wagner as the representative of pessimistic resignation, whereas Nietzsche had adopted a heroic attitude toward the tragedy of human existence.

CONTEMPORARY LITERATURE

E. Feise edits *Fifty Years of German Drama* (Johns Hopkins Univ. Press), a bibliography of modern German drama based on the Loewenberg collection in the Johns Hopkins University Library.

R. S. Collins, *The Artist in Modern German Drama* (Edward Brothers,

ROMANCE LANGUAGES AND LITERATURES

Ann Arbor, Mich.), studies the artist figures from the standpoint of individual authors, of literary movements, and of individual problems, *viz.*, the artist as a member of society, the Boheme, the actor, and the conflict between art and love.

W. H. Root, "German Naturalism and the 'Aesthetic Attitude'" (*GR*), stresses the fact that the purpose of naturalistic objectivity was not primarily esthetic, but a means to control life through understanding. Objectivity was not intended to weaken the emotional impact on the reader, but to intensify it. Naturalism wanted to further social progress and still remain artistic by observing the laws of esthetic expression.

A. Gustafson, "Degenerate Heredity and Family Tradition in Hermann Bang's *Haabløse Slægter*" (*JEGP*), analyzes the naturalistic theme of heredity in the Danish novel as representative of decadence in the Scandinavian countries during the late 19th century.

K. M. Gunvaldsen, "The Master Builder and Die Versunkene Glocke" (*MfdU*), sees in G. Hauptmann's play a reconception of Ibsen's *Master-Builder*, but much more independent than *Einsame Menschen*. Both poets try to liberate themselves from traditional Christian standards; both question their unselfishness of devotion to their ideals. But Ibsen's hero remains selfish and fails in his desire to preserve his fame, whereas Hauptmann's hero wants the positive freedom of serving God in his art.

F. B. Wahr, "The Timon Mood and its Correctives in Gerhart Hauptmann" (*GR*), sees in love and sympathy for humanity and denunciation of baseness and ingratitude the prin-

cipal motifs of Hauptmann's work. Beginning in disillusionment, the author gradually finds a positive answer to life in the creative activity of love and labor.

MfdU commemorates the death of Hermann Stehr and Josef Ponten with a special number containing articles by H. Boeschstein on "Hermann Stehr, der Erzähler-Mystiker," E. Hofacker on "Hermann Stehrs *Gudnatz*," and H. Rehder on "Josef Ponten, Gestalt und Werk."

H. J. Meesen, "Paul Ernst's Transition from the Drama to the Epic (*MfdU*), finds the key to Ernst's abandonment of the dramatic form in his religious experience. His tragedy was based on the conflict between an absolute moral code and the relativistic ethical demand of self-realization. Ernst's tragic heroes lived in an ego-centric world which was essentially godless. When Ernst resolved this tragic isolation in the divine will as the only reality, he was forced to adopt the epic as the only adequate form to express the overpowering feeling of infinity.

W. K. Pfeiler, *War and the German Mind* (Columbia Univ. Press), analyzes the mind of the war generation as expressed in the novels written during the armistice, considering both pacifists, like Werfel and Remarque, and also nationalists. His study reveals that the martial philosophy of life was intensified by the experiences of the first World War, and that the humanitarian ideals even at that time yielded to a growing nationalistic code that might is right.

Note: A complete bibliography in our field is published in the supplement number of the *PMLA*. For a bibliography on German-American literary relations see *JEGP*.

ROMANCE LANGUAGES AND LITERATURES

By ERNEST RICHARD MOORE

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GENERAL

The cessation of communications with the Romance countries because

of the current war hampered but did not curtail scholarly investigation during 1941. Interest in linguistics

quickened. A rapidly increasing demand for instruction in the languages and literatures of Hispanic America has been felt. The effect of the war upon college enrollment in the Romance languages was marked. Against a total college enrollment decline of 10%, French fell off 23.5% in the fall of 1941 over the previous fall, while Spanish showed an increase of 27%.

BIBLIOGRAPHIES

A general bibliography was published in the supplement number of the *PMLA*.^{*} "Doctor's degrees in modern foreign languages" (*MLJ*, 804) by H. Doyle, and "Theses dealing with Hispano-American language and literature" (*Hisp*, 197) by S. Leavitt list the current research, completed or in progress, by American scholars. The annual surveys continued: "Recent literature of the Renaissance" (*SP*, 336) by several bibliographers, J. Fucilla's "Bibliography of Italian studies in America" (*Ital*, 14 *et passim*), and "L'annee littéraire" (*MLJ*, 446) by A. Schinz. S. Will published a useful *Bibliography of American Studies on the French Renaissance (1500-1600)* (III.). S. Travers' *Catalogue of Nineteenth Century French Theatrical Parodies* (King's Crown) covered the period 1789-1914. A splendid *Bibliography of Italian Linguistics* (*LSA*) was contributed by R. Hall. R. Grismer issued the first two volumes of his ambitious *New Bibliography of the Literatures of Spain and Spanish America* (Perine). Extensive current bibliographies of Spanish and Portuguese publications appeared in the

RFH, supplemented for Hispano-american literature by the *RHM*.

LINGUISTICS

Research.—Activity increased in linguistic research during the year. H. Deferrari in his preliminary *Outline of a Theory of Linguistic Change* (Edwards Bros.) seems to base his theory upon assimilation, reaction to assimilation, and the need for forceful expression. Y. Malkiel wrote an interesting article on "The development of *-iru* in Latin and Romance" (*L*, 99), while G. Bonfante related "The Latin and Romance weak perfect" (*L*, 201). The indefatigable L. Spitzer wrote a comparative article "Hispanoamericano *ingrímio*, português *ingreme* y francés *grimoire*" (*RFH*, 155).

French.—J. Galland discussed scientific investigation of pronunciation—spelling relations in "A study of the structural elements of the French language" (*MLJ*, 447). Semantic changes occupied W. Holbrook in "The adjective *gothique* in the XVIII century" (*MLN*, 498). L. Spitzer's articles are numerous: "French (*argot*) *frangin*, *-e* = 'brother, sister'" (*RR*, 296); "Un usage de '*se défendre*'" (*MLN*, 81); "De L'inversion '*absolue*'" (*PMLA*, 1150) especially in poetry; "Dieu et ses noms" (*PMLA*, 13), from *Roland*, 3694; "Binôme" (*MLN*, 426), "French *pataquès*, *cuir*" (*L*, 253). C. Livingston linked "Old French *assiet*" (*MLN*, 414) with *aissié*, "wall of boards." In "Arrement, its meaning and its relation to *encre*" (*RR*, 408), L. Peckham distinguished between black solid dye and writing ink.

Spanish.—The outstanding work was M. Nichols' critical *Bibliographical Guide to Materials on American Spanish* (Harv.). H. Keniston demonstrated the contribution the phonetics laboratory makes in his "History of *-l-* at the end of a syllable" (*HR*, 176). Y. Malkiel called the inclusion of non-existent words in the new Historical Dictionary of the Spanish Academy "A lexicographic mirage" (*MLN*, 34), discussed "The *amulatado* type in Spanish" (*RR*,

^{*} Abbreviations of magazines: *BA*, *Books Abroad*; *FR*, *French Review*; *Hisp*, *Hispania*; *HR*, *Hispanic Review*; *I-AQ*, *Inter-American Quarterly*; *Ital*, *Italica*; *L*, *Language*; *MLJ*, *Modern Language Journal*; *MLF*, *Modern Language Forum*; *MLN*, *Modern Language Notes*; *MLQ*, *Modern Language Quarterly*; *MP*, *Modern Philology*; *PMLA*, *Publications of the Modern Language Association of America*; *RFM*, *Revista de Filología Hispanoamericana*; *RHM*, *Revista Hispánica Moderna*; *RI*, *Revista Iberoamericana*; *RLM*, *Revista de Literatura Mexicana*; *RR*, *Romanic Review*; *S*, *Speculum*; *SP*, *Studies in Philology*; *LSA*, *Linguistic Society of America*; *MLA*, *Modern Language Assn.*

278) or the effects of suffix word-formation, and argued at length that the trend of the Spanish language toward "Clarity, economy, and concentration of resources" is also disclosed in its system of word-formation (SP, 429). L. Kiddle listed all "*Los nombres del 'pavo' en el dialecto nuevo mejicano*" (Hisp, 213). Cór deserves first place among the etyma of "Spanish *acordar* and related words" (L, 119), M. Singleton proved. L. Spitzer, "*Interrogativo e indefinido*" (RFH, 1), corroborated Frei's thesis on the priority of the former; "Sp. *quejarse* 'complain'- OS. *quexar* 'constrain'" (HR, 309) <*coaxarse 'to constrain'; "O. Sp. *Regunzar*" (HR, 397) probably from *re-cognit-iare.

Italian.—The major scholarly work to appear was M. Pei's *The Italian Language* (Col.) which gathered together separate research into a useful handbook. R. Hall gave an historical account of the "Definite article family name in Italian" (L, 33). "Designations of the cheek in Italian dialects" (L, 212) were mapped and elucidated by H. Kahane. Other articles: H. Noce, "The apocopated form of the infinitive in Italian prose" (Ital, 197); L. Spitzer, "*Due parole lucchesi antiche*" (Ital, 193), i.e., *corcibaldo* and *intrazacto*.

Portuguese linguistics produced a notable work in *Portuguese word-formation with suffixes* (LSA) by J. Allen; L. Spitzer, "Portuguese *-(da) doso*" (L, 50) and "*Enxergar*" (HR, 216).

FRENCH

Medieval.—According to C. Odegaard, "Carolingian oaths of fidelity" (S, 284) are two in number, distinct in nature. That "The *Eulalia* Ms. at line 15 reads *aduret*, not *adunet*" (S, 334) was proved by H. Learned. M. Houck contributed a book on the *Sources of the 'Roman de Brut' of Wace* (Calif.). E. Ham discussed "An eighth *Venjançe Alixandre*" (MLN, 409) written by Jean Mansel. H. Green considered the historical aspects of "Fromont, a traitor in the *chanson de geste*" (MLN, 329). U. Holmes in "*Chernubles de Muniger*"

(S, 244) argued for the meaning "Black Knight" (<Slavic) from "Black Mountain" (<Spanish). Three Chrétien de Troyes items: J. Misrahi, "Fragments of *Erec et Enide*" (PMLA, 951); W. Nitze "*Or est venu qui aunera*, a medieval dictum" (MLN, 405), from *Charrete*; R. Hall declared that "The silk factory in Chrétien de Troyes' *Yvain*" (MLN, 418) depends on Sicilian or Oriental sources. "Arnulfus and the *Faits de romains*" (MLQ, 3), by B. Marti, showed the latter borrowed from the former's *Commentary*. Provençal articles: "Eleanor of Aquitaine" (S, 459) by F. Chambers, found that evidence of her bringing troubadours to the court of Louis VII is only circumstantial; R. Hill and T. Bergin issued a needed *Anthology of the Provençal Troubadours* (Yale); K. Lewent (ML, 203) wrote some "Observations on old Provençal style and vocabulary." To "When did Joinville write his *Vie de Saint Louis*?" (RR, 233), A. Foulet answered, as late as 1305-06. An accurate ms. fragment of the "*Coutume de Bretagne*" (S, 480) was described by E. Ham. His "scientific achievement is a texture of 'hunches'", common sense, synthesis, and prophetic vision said D. Durand of "Nicole Oresme and modern science" (S, 167). W. Rice found "A Villon variant" (RR, 39), for "*l'Építaphe Villon*." The contribution of law societies was the subject H. Harvey investigated in "*The Theatre of Basoche*" (Harv.)

Sixteenth Century.—The "Anti-Petrarchism of the Bléiade" (MP, 15) was established by R. Clements, who also held that the "Pléiade censure of classic mendacity" (PMLA, 633) was but the implicit acceptance and application of a conservative aesthetic canon. I. Silver pursued the question "Did Du Bellay know Pindar?" (PMLA, 1007); his "Ronsard imitator of Du Bellay" (SP, 165) permits of several important consequences. C. Humiston published his *Comparative Study of the Metrical Technique of Ronsard and Malherbe* (Calif.); J. Hutton disclosed some mistaken attributions in

"Malherbe, Saint-Gelays, Tabourot, Théophile, and the *Jardin des Muses*" (MLN, 492); M. Françon's "*Un motif de la poésie amoureuse au XVI^e siècle*" (PMLA, 307) was on the "thème de la puce." S. Will in "French literature" (MLQ, 439) published an excellent critical bibliography of works on the French Renaissance since 1800. "*Quelques aspects démocratiques de la philosophie de Montaigne*" (MLN, 485), by J. David. L. Keating's *Studies in the Literary Salon in France, 1503-1615* (Harv.).

Seventeenth Century.—Drama: H. Lancaster's *The Comédie Française, 1680-1701* (JHP), by-product to his *History*, dealt with plays, actors, spectators, and finances; *The Profession of King in Seventeenth-century French Drama* (JHP) by M. Baudin; W. Schwartz threw light on "Molière's theatre in 1672-73" (PMLA, 395) by examining *Le registre d'Hubert*, a Palais Royal treasurer's account. *From Beast-machine to Man-machine* (Oxford) by L. Rosenfield deals with the animal soul as seen in French letters. Other articles: L. Spitzer, "*Le 'poêle' de Descartes*" (MLN, 110); L. Dabney placed "The date of Thillois' *Solyman II*" (MLN, 431) not before 1612; H. Skornia found "Charles Sorel as a precursor of realism" (PMLA, 379) in all but technique; B. Morressette disclosed an antecedent to Voltaire in "Mlle. Desjardins and the *Apologie du luxe*" (MLN, 209).

Eighteenth Century.—P. Hazard wrote on the prevalence of "*Le problème du mal dans la conscience européenne du dix-huitième siècle*" (RR, 147). "An unpublished letter of Fénelon" (MLN, 106), dated 1714, was edited by B. Facticeau. "Polygamy in the *Lettres persanes*" (RR, 56) foreshadowed similar ideas in *L'Esprit des lois*, according to R. Oake. Voltaire items are numerous: I. Wade's *Voltaire and Mme. du Châtelet* (Prntn); M. Barr supplemented previous MLN bibliographies with "Bibliographical data on Voltaire from 1931 to 1940" (MLN, 563); "Voltaire's *Poème sur le désastre de*

Lisbonne" (MLN, 422) is basically pessimistic concludes G. Havens, who also published "Voltaire's letters to Pierre Uictet and his family" (RR, 244), dated 1755-68, nine inedited; H. Remak edited a letter from "Voltaire à d'Argental (juillet 1759)" (MLN, 504); K. McKee exploded the belief in the popularity of "Voltaire's Brutus during the French Revolution." (MLN, 100). For Diderot's *Treatment of the Christian Religion in the 'Encyclopédie'* (King's Crown) consult J. Barker. Related to England is H. Monod-Cassidy's *Un voyageur-philosophe au XVIII^e siècle, l'Abbé J.-B. LeBlanc* (Harv.). H. Grubbs defended *Jean-Baptiste Rousseau* (Princeton). N. Torrey in "Rousseau's use of the sunrise theme" (RR, 339) described his glimpses of nature as "vague, general and subjective."

1800-1941.—P. Sturm wrote a discursive study of "Joseph Joubert's self-portrait" (RR, 345), his *Pensées*. Unpublished correspondence (1833-55) of Saint-Beuve and Théophile Foisset was edited by C. Sprietsma (RR, 63). J.-A. Bédé, "*Les idées esthétiques de Lamennais*" (RR, 359), is a centenary publication. H. Forest was struck by the effect upon realism of "*Theodore Joubroy et le problème de l'imitation dans les arts*" (PMLA, 1095). A. Schaffer judges "A Breton romanticist, Mme. Auguste" (MLN, 541) "ambitious, if somewhat feeble." On poetry: F. Baldensperger, "*A propos du vers 65-66 du 'Moïse' de Vigny*" (RR, 171); C. Bird, *Alfred de Vigny's Chatterton* (Lymanhouse), a study of genesis and sources; A. Feuillerat, "*Notes sur quelques poèmes de Baudelaire*" (RR, 399); D. Aish branded "*Le rêve de Stéphane Mallarmé*" (PMLA, 874) as perfectionism; "Jean Aicard (1848-1921)" (MLF, 1), by A. Schaffer. On the novel: L. Pronger discussed "Marmontel as a source of Stendhal's" (MLN, 433) character Julien Sorel; C. Viens aired "An exchange of notes over George Sand" (MLN, 548) between Dumas and Planché; H. Garrett, *Clothes and Characters: the Function of Dress in*

Balzac (Phila.); the techniques of Flaubert and Keller were compared in "*L'Education sentimentale* and *Der grüne Heinrich*" (PMLA, 249), by N. Furst; *Maupassant Criticism in France 1880-1940* (King's Crown), by A. Artinian; R. Niess found "Autobiographical elements in Zola's *La joie de vivre*" (PMLA, 1133) in Lazare Chanteau; "The tragic naturalism of Paul Hervieu" (PMLA, 861) by H. Cook; D. Hamilton, "The composition of Anatole France's *L'Orme du mail*" (MLN, 245); R. Vigneron traced the relations of "Marcel Proust et Robert de Montesquiou" (MP, 159); L. Thielemann was occupied with "The problem of unity and individualism in Romans' social philosophy" (MLQ, 249); F. Baldensperger produced a provocative analysis of certain trends in *La littérature française entre deux guerres, 1919-39* (Lymanhouse).

ITALIAN

Literary History.—Perhaps the principal work was the *Literary History of the Italian People* (Macmillan) by J. Kennard, the result of many years of research; however, consult the review published in *Italica*.

Dante.—H. Austin gave an explanation of "The three gestures" (*Ital*, 81) in Dante relating to the snake. The syntax and reference of "*Tal che testè piaggia*" (*Ital*, 87), *Inferno* VI, 69, was elucidated by K. McKenzie. "Dante's figures of speech" (*Ital*, 120), according to T. FitzGerald, are numerous enough to disprove T. S. Eliot's statement that Dante employs "very few metaphors." C. Singleton in "Dante in the *Divine Comedy*" (*Ital*, 109) argued for the non-historical approach to a work which should be considered a sustained metaphor.

Petrarch and Others.—"The dates of three letters of Petrarch" (*S*, 485) are cleverly determined by E. Wilkins. B. Ullman designated "Some aspects of Italian humanism" (*PQ*, 212). A book appeared on *Proverbs and proverbial phrases in Basile's 'Pentameron'* (Calif.), compiled by C. Speroni. Decembrio, Poracchi, and

Manzi are the translators mentioned in J. Berzunza's "Three Italian versions of Quintus Crutius Rufus' *Historiae Alexandri magni*" (*Ital*, 133). D. Internoscia discussed "Misunderstood Neapolitan expressions in Pulci's *Morgante*" (*Ital*, 51). *Princeps concordia, Pico della Mirandola and the scholastic tradition* (Harv.) were investigated by A. Dulles.

Sixteenth Century.—F. Colimore compiled a bibliography of the "*Edizioni e traduzioni della 'Mandragola'*" (*Ital*, 55), while P. Harris made an excellent survey of recent "Progress in Machiavelli studies" (*Ital*, 1). On the theatre: A. Gilbert described "Fortune in the tragedies of Giraldis Cintio" (*PQ*, 224) as the tragedy of fortune; E. Goggio saw "The prologue in the *Commedie erudite*" (*Ital*, 124) as borrowed from Latin comedies. "G. B. Vico" (*Ital*, 145) did not anticipate modern linguistic science, wrote R. Hall.

Modern Period.—L. Breglio, *Life and criticism of Francesco de Sanctis* (Vanni); A. Torrielli, *Italian Opinion on America as Revealed by Italian Travellers, 1850-1900* (Harv.), and A. DeVito, "The struggle for existence in the work of Giovanni Verga" (*Ital*, 179).

SPANISH

Early Period.—H. Corbató in "La sinonimia y la unidad del 'Poema del Cid'" (*HR*, 327) makes the statement that one author wrote this epic. A posthumous contribution by A. Solalinde is "*Una fuente de la 'Primera Crónica General': Lucano*" (*HR*, 235). J. Gillet reprinted in "*Hernández-Santillana, Obra nueva mente compuesta sobre el nacimiento del príncipe don Felipe (1527?)*" (*HR*, 48) an early Spanish auto. In "Algunos datos sobre Hernando de Acuña y Francisco de la Torre" (*HR*, 41), N. Cortés furnished Acuña's birthdate (1518) and other data on both writers.

Golden Age.—R. Schevill in "Lope de Vega and the year 1588" (*HR*, 65) substantiates his belief that Lope did not participate in the famous Armada. Ingenious "New aids for dat-

ing the undated autographs of Lope de Vega's plays" (*HR*, 79), that is, pious sketches and invocations at the top of the mss., were discovered by W. Fichter. C. Wagner reached the conclusion that "Lope de Vega's fifteen hundred comedias (*HR*, 91), as a phrase, has no value for determining the date of his *Moza de cántaro*. "Lope's *Don Lope de Cardona*" (*HR*, 348), stated A. Bork, was written to defend the Duke of Sessa. E. Morby drew attention to Portugal and Galicia in the plays of Tirso de Molina (*HR*, 266), and F. Halstead examined "The attitude of Tirso de Molina toward astrology" (*HR*, 417). H. Johnson discovered that the immediate "Source of Calderón's *La lepra de Constantino*" (*HR*, 482) is in Villegas' *Flos sanctorum*. "Vélez de Guevara" (*HR*, 459) is a painstaking study in orthoëpy by G. Wade. M. Romero-Navarro discussed the "Que-relas y rivalidades en las Academias del siglo XVII" (*HR*, 494), and analyzed the 73 "Alegorías del Criticón" (*HR*, 151). S. Morley adduced new data on the saintly erudite "Juliana Morell" (*HR*, 137, 399), mostly biographical. G. LaGrone, "Salas Barbadillo and the *Celestina*" (*HR*, 440) is a study in influences.

Nineteenth Century.—On the theater: J. Shearer stressed the genealogy and influence of *The Poética and Apéndices of Martínez de la Rosa* (Princeton). "Dramatic criticism in the comedies of Bretón de los Herberos" (*Hisp*, 71), C. Qualia revealed, sought to encourage classical tastes and create humor. I. Chart wrote "Antonio Hurtado and the development of the zarzuela" (*Hisp*, 429). On the novel: A. Heras, "Galdós y el Nuevo Mundo" (*Hisp*, 101). J. Sánchez revealed the surprisingly constant advocacy of "Freedom of choice in marriage in Pereda" (*Hisp*, 321). Tendencies to self-plagiarism and journalism were found in "Dicenta's material and method" (*HR*, 383), by E. Morby. Two Unamuno enthusiasts were J. Englekirk, "Unamuno, crítico de la literatura hispanoamericana" (*RI*, 19), with a bibliography; and L. Livingstone, "Unamuno and

the aesthetic of the novel" (*Hisp*, 442). "Heroes and Hamlets: the protagonists of Baroja's novels" (*Hisp*, 91) were studied by D. Bolinger, and R. Avrett investigated "The treatment of satire in the novels of Leopoldo Alas." (*Hisp*, 223). *Versification*: In "*Redondilla and copla de arte menor*" (*HR*, 489), D. Clarke considered the second as the origin of the first; R. Niess, "The *pie quebrado* in Samaniego" (*HR*, 304).

PORTUGUESE

E. Williams, "The Old Portuguese versions of the life of Saint Alexis" (*HR*, 214), their relative dates; A. Bell, "Damião de Goes, a Portuguese humanist" (*HR*, 243), lived from 1502-74.

SPANISH AMERICAN

Literary History.—The most useful 1941 volume was *An Outline of Spanish American Literature* (Crofts) written by a group of scholars under the sponsorship of The Instituto Internacional de Literatura Iberoamericana. This Institute's *Memoria* (Calif.), a valuable collection of papers, is not analyzed here because of space restrictions.

Bibliography.—The outstanding volume was S. Robert's *José Toribio Medina* (Wilson), with a biography. Others: E. Moore, *Bibliografía de novelistas de la Revolución Mexicana* (Mexico), works and criticism of over 60 novelists; D. Reid, "Latin American novels in English translation" (*I-AQ*); J. Warshaw, "Jorge Isaacs' library" (*RR*, 389), a catalogue; J. Dossick's bibliographies in the *Mexicana Review* (New York); R. Warner, "Bibliografía de las obras de I. M. Altamirano" (*RI*, 465); J. Luna, "Revue de l'Amérique Latine" (*RI*, IV, 223), hispanoamericana; E. Kelly, "Obras de la Avellaneda publicadas en México" (*RI*, 123); E. Moore, "Obras críticas y bibliográficas referentes a la novela mexicana anterior al siglo XX" (*RI*, 235), and with J. Bickley, "Rafael Delgado" (*Libro y Pueblo*, 22), a bio-bibliography.

The Theater.—A. Torres-Ríoeseo,

"El primer dramaturgo americano—Fernán González de Eslava" (*Hisp*, 161), a popularization; H. Johnson, a critical "Edition of *Triunfo de los santos*" (Penn.), 1579, a Mexican Jesuit school play, and also "Los corrales de la ciudad de México" (*RI*, 133); W. Jones, "Beginnings of River Plate drama" (*Hisp*, 79), from 1544-1810, and also "Paraguay's theatre" (*BA*, 40.)

The Novel.—The splendid critical synthesis, *Grandes novelistas de la América Hispana* (Calif.), was the work of A. Torres-Rioseco. Mexican: H. Houck, "M. L. Guzmán" (*RI*, 139); R. Stanton, "J. R. Romero" (*Hisp*, 423); M. Yancey, "Fernández de Lizardi and his foreign sources for *Las noches tristes*" (*HR*, 394); E. Moore, "Nellie Campobello" (*Mexican Life*, No. 2, 21), "La primera novela histórica mexicana" (*RLM*, 370), "La desconcida segunda edición del *Periquillo*" (*RLM*, 307). E. Morby, "Una batalla entre antiguos y modernos" (*RI*, IV, 119), i.e., Juan Valera and Carlos Reyes, Uruguayan; "Los animales en las obras de Benito Lynch" (*RI*, 357), Argentinian, by J. Owre.

Poetry.—Notable was J. Van Horne's biography of *Bernardo de Balbuena* (Mexico); E. Mapes continued to publish "Obras inéditas" (*RHM*, 39) of M. Gutiérrez Nájera; D. Wogan, "Ercilla y la poesía mexicana" (*RI*, 371), on influences; A. de la Torre, "La biografía de Rubén Darío" (*RI*, 95), new data; C. García-Prada, "Julio Arboleda" (*RI*, 39), and "Guillermo Valencia" (*Hisp*, 285), both Colombians. I. Leonard, "On the Cuzco book trade, 1606" (*HR*, 359) and with O. Green, "On Mexican book trade in 1600" (*HR*, 1), about books imported from Spain.

COMPARATIVE LITERATURE

French Influences. — Excellent work continued in this field. On English: M. Barr, *Voltaire in America, 1744-1800* (JHP); D. Bond and J. Tucker, "Anglo-French and Franco-American studies" (*RR*, 176), a lengthy critical bibliography; W.

Nitze, "Bedier's epic theory" (*MP*, 1) in its influence upon critical thinking about Arthuriana; P. Baum, "Rossetti's 'The leaf'" (*MLQ*, 187), a translation of Arnault's "La feuille"; R. Oake, "Montesquieu and Hume" (*MLQ*, 25 and 225); "Saint-Beuve vu par les allemands" (*RR*, 259) was misunderstood said B. Lang; "Nine letters from Emile Zola to Frans Netscher" (*PMLA*, 261), 1885-91, a Dutch naturalist. On Spanish: P. Courtines, "Spain and Portugal in Bayle's *Dictionnaire*" (*Hisp*, 409), 48 influential items; C. Staubach, "Feijóo and Malebranche" (*HR*, 287), both enemies of error; C. Lorenz, "Translated plays in the Madrid theatres (1808-1818)" (*HR*, 376), less numerous than the Spanish originals; E. Mapes, "Innovación e influencia francesa en la métrica de Rubén Darío" (*RHM*, 1), mostly in technique.

Italian.—On English: J. Fucilla, "Shakespeare in Italian criticism" (*PQ*, 559), a bibliographical supplement to Ebisch; G. Borgese, "The dishonor of honor" (*RR*, 46) motif traced from Mauro (†1536) through Tasso to Shakespeare. On Spain: "Il Guicciardini e la Spagna" (*PMLA*, 992) by V. Luciani; "G. B. Marino and the Conde de Villamediana" (*RR*, 140) by J. Fucilla; P. Rogers' *Goldoni in Spain* (Academy); S. Stoudemire, "Metastasio in Spain" (*HR*, 184), the royal family favorite; R. Clements, "Marguerite of Navarre and Dante" (*Ital*, 37), incontrovertible borrowings limited to the first five cantos of the *Inferno*.

Spanish.—On English: D. Allen found Shakespeare's "Jacques" 'seven ages' and Pedro Mexia" (*MLN*, 601) result and source, through Jaggard or Milles; E. Knowles listed 48 "Allusions to *Don Quijote* before 1660" (*PQ*, 573) in English literature, and dated "Editions of Shelton's *Don Quixote*" (*HR*, 252) in 1612 and 1620, giving variants; J. Spell, "Hispanic contributions to the early theatre in Philadelphia" (*HR*, 192), chiefly Cervantes and Calderon. On French: "The sources of Thomas Cornelle's *Comtesse d'Orgueil*" (*MLN*, 211) are

plays by Cubillo de Aragón and Moreto, according to J. Privitera; and "Boisrobert's *La vraye Didon*" (RR, 329). E. Eyer is found indebted to Lasso de la Vega and/or Virués. E. Gates proved "Antonio da Fonseca Soares an imitator of Góngora and Calderón" (HR, 275).

LATIN LITERATURE

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The fourth and final volume of *Remains of Old Latin*, edited and translated by E. H. Warmington, deals with archaic Latin inscriptions.

CLASSICAL LATIN AUTHORS*

Plautus and Lucretius.—Plautus' use of vulgarity, extra-dramatic speeches, and Roman allusions appears to be more frequent in his "later" plays, according to J. N. Hough (TAPA 71, 186 ff.). C. W. Keyes (*ibid.* 217 ff.) finds in the *Epidicus* of Plautus no evidence "that a marriage of half-brother and half-sister took place in a play of the New Comedy," as W. E. J. Kuiper believes. *A Chronology of the Plays of Plautus* (Cambridge, Mass., 1941) is a dissertation by C. H. Buck, Jr. That Lucretius produces in his verse a pattern of sound effects that is expressive of the terms of his atomistic theory is the thesis of an article by P. Friedlaender (AJP 62, 16 ff.); and (TAPA 71, 78 ff.) L. Edelstein suggests that, in the *Græius Homo* of *De Rerum Natura* I, 66, Lucretius alludes to the pioneering pre-Socratic philosophers, not to Epicurus.

Catullus and Cicero.—H. W. Prescott (*ibid.* 473 ff.) presents a brief in favor of regarding Catullus' 68th poem as a unit; J. P. Elder (PAPA

71, xxxiii) summarizes a study of the art of the 63rd poem, the "Attis"; and (AJP 62, 222 ff.) H. L. Levy offers an interpretation of the osculatory calculation in lines 7-11 of Catullus 5. In E. A. Robinson's opinion (TAPA 71, 524 ff.), a fragment from Nepos suggests that Cicero's *De Legibus* was completed in the last years of the orator's life. J. C. Plumpe presents an interpretative study of Cicero's use of "Roman character-words" in his panegyric on the *legio Martia* in the 14th *Philippic* CJ 36, 275 ff. J. N. Hough (*ibid.* 337 ff.) considers anew the evidence of B. G. II, 8 to determine the site of Caesar's camp on the Aisne, which he identifies with Stoffel's excavations near Mauchamp.

Vergil continues to be the object of extensive literary study. John Erskine's essay, "Vergil," (CJ 36, 390 ff.), emphasizes the poet's obsession by and his portrayal of "the past-riden mood." W. F. J. Knight examines Vergil's methods of integration of sources and of plot (*Verg.* 5, 7 ff. and 6, 17 ff.), and N. W. DeWitt (*ibid.* 6, 3 ff.) discusses the poet's "intensified style." E. L. Highbarger has contributed a short essay on "Vergil and Horace, Friends" (*ibid.* 38 ff.) and has published *The Gates of Dreams* (Johns Hopkins Press, 1941), a detailed archaeological examination of the closing lines of *Aeneid* VI. Various phases of this sixth book have been treated in articles in *Vergilius*, by C. Murley's "The Classification of Souls in the Sixth Aeneid" (5, 17 ff.), by J. F. Latimer's "Aeneas and the Cumaean Sibyl: A Study in Topography" (5, 28 ff.), and by J. G. Hawthorne's "Deiphobus in Hades" (6, 32

* Periodicals are abbreviated as follows: AJA, American Journal of Archaeology; AJP, American Journal of Philology; CB, Classical Bulletin; CJ, Classical Journal; CO, Classical Outlook; CP, Classical Philology; CW, Classical Weekly; HSCP, Harvard Studies in Classical Philology; Lang., Language; Spec., Speculum; TAPA, Transactions of the American Philological Association; PAPA, Proceedings of the same; Verg., Vergilius; YCS, Yale Classical Studies.

ff.). H. T. Rowell (*AJP* 62, 261 ff.) emphasizes the bearing of *Aeneid* VII, 170-189, as well as *Aeneid* VI, upon Augustus' plans for his imperial forum. The sources of the names of Trojans and Latins mentioned in the *Aeneid* are investigated by Catharine Saunders (*TAPA* 71, 537 ff.), and H. W. Parke (*AJP* 62, 490 ff.) examines briefly the sources of *Aeneid* III, 692-705. G. Norwood (*CJ* 36, 354 f.) calls attention to the conscious pattern of arrangement in *Georgics* IV, 453-527. A bibliographical survey of recent work on Vergil is provided by G. E. Duckworth (*Verg.* 6, 49 f.).

Horace and Ovid.—The late J. W. Hewitt's article, "The Gratitude of Horace to Maecenas" (*CJ* 36, 464 ff.), tries to determine the significant meaning of the epithet *memori* in *Sermones* II, 6, 31. R. M. Haywood (*ibid.* 37, 28 ff.) believes that *Odes* I, 22 is persiflage, but aimed specifically at *Propertius* III, 16. L. Edelstein (*AJP* 62, 441 ff.) would punctuate *Odes* II, 7, 10 after *sensi*, connecting *relicta non bene parmula* with what follows: Horace, probably, is not reproaching himself but rather is describing "in accurate and proper terms the inglorious conduct of Brutus' troops at Philippi." F. O. Copley (*ibid.* 87 ff.) defends and interprets the manuscript reading *exemplo trahentis* of *Odes* III, 5, 15 in the light of Roman legal phraseology. Hilda Buttenweiser points to the notable increase in 13th century manuscripts of Ovid's *Fasti* as additional evidence of the strong Ovidian tradition in the late Middle Ages. (*TAPA* 71, 45 ff.).

Seneca and Others.—The treatment of guilt and error in Senecan tragedy is the subject of a critical study by R. A. Pack (*ibid.* 360 ff.). Agnes K. Lake (*AJP* 62, 494 ff.) suggests Minturnae as the place of Trimalchio's dinner, described by Petronius, and B. L. Ullman (*CP* 36, 346 ff.) elucidates *Satyricon* 56, 7-10 in the light of Martial's 13th and 14th books (the *Xenia* and *Apophoreta*). An interpretation of *Quintilian* XII, 10, 27-29 is offered by E. Adelaide Hahn's article (*Lang.* 17, 24 ff.). A. H.

Travis (*TAPA* 71, 579 ff.) explains the special pertinence of Martial's phrase *improbi iocos Phaedri* in *Epigrammata* III, 20, 5, and W. S. Messer (*CJ* 36, 226 ff.) points out the legal connotation in the phrase *se fecisse* of Martial IX, 15. C. C. Mierow (*ibid.* 259 ff.), under the title "Two Roman Emperors," ingeniously traces the two threads, of fact and of prejudice, in Tacitus' account of Tiberius.

LATE LATIN LITERATURE: MEDIEVAL AND RENAISSANCE

St. Jerome's use of satire, particularly in the *Letters*, is illustrated by Mary E. Pence (*CJ* 36, 322 ff.). J. C. Pando is the author of *The Life and Times of Synesius of Cyrene as Revealed in His Works* (Catholic Univ. of America Press, Washington, 1940), and W. L. Wade, of *A Comparison of the De Magistro of St. Augustine with the De Magistro of St. Thomas* (Ann Arbor, 1940; microfilm). Ruth E. Messenger provides a survey of recent studies in medieval Latin hymns (*TAPA* 71, 248 ff.). E. K. Rand (*ibid.* 501 ff.) considers the question, "How much of the *Annotaciones in Marcianum* is the work of John the Scot?" R. E. Bennett (*Spec.* 16, 34 ff.) presents a critical analysis of Walter Map's Latin chivalric romance, *De Societate Sadii et Galonis*. Sister Emma T. Healy's dissertation, *Saint Bonaventure's De Reductione Artium ad Theologiam* (St. Bonaventure College, 1940), comprises a commentary, introduction, and translation, and Edmund Hunt's *Iohannis Dominici Luccula Noctis* (Univ. of Notre Dame, 1940) is a new edition of Dominici. The nature, present status, and possibilities of studies in medieval Latin are considered by D. C. Allen in an article in the *Modern Language Quarterly* (2, 403 ff.) and by L. R. Lind, in a brochure entitled *Medieval Latin Studies* (Univ. of Kansas Press, 1941).

New translations include Jacobus de Voragine's *Golden Legend* by Granger Ryan and Helmut Ripperger in two handsome volumes (Longmans, Green, 1941); Andreas Capellanus' twelfth-century *Art of Courtly Love*, by J. J. Parry (Columbia Univ.

Press, 1941); and Erasmus' *Praise of Folly*, by H. H. Hudson (Princeton Univ. Press, 1941).

LITERARY HISTORY AND CRITICISM

O. C. Crawford is the author of an essay on the *laudatio funebris* (*CJ* 37, 17 ff.). In a well reasoned and searching essay (*TAPA* 71, 1 ff.), W. Allen, Jr. attacks the current use of the term *epyllion* to denote a definite literary genre. W. C. Korfmacher (*PAPA* 71, xlvii f.) summarizes a study of character portrayal in early Roman epic. Mary K. Glick's *Studies in Colloquial Exaggeration in Roman Comedy* (Univ. of Chicago Libraries, 1941) is a Chicago dissertation. E. B. Stevens (*AJP* 62, 426 ff.) gives an accounting of the references to pity that occur in the poetry of the Roman Republic, and P. R. Coleman-Norton (*CB* 17, 49 ff.) writes on the occurrence of the idea of friendship in Roman drama. H. G. Mullens discusses "the decadence theme in Augustan literature." (*Verg.* 6, 26 ff.).

C. W. Mendell's *Our Seneca* (Yale Univ. Press, 1941) is a literary study of Senecan tragedy in comparison with the Greek predecessors and of its influence upon Elizabethan and Shakespearean drama. J. F. Abbick contributes a brief essay on "Terence in the Middle Ages." (*CB* 17, 25 f.), and Mary F. Tenney demonstrates the influence of Tacitus in the politics of early Stuart England (*CJ* 37, 151 ff.). Further studies of literary influence are J. G. Fucilla's "The Horatianism of Antonio Ferreira" (*Verg.* 6, 8 ff.) and M. H. Griffin's "Thomas Gray, Classical Augustan" (*CJ* 36, 473 ff.). Leicester Bradner's *Musae Anglicanae: A History of Anglo-Latin Poetry, 1500-1925* (Modern Lang. Assoc. of America, New York, 1940) is an excellent and substantial survey that fills a long-standing need.

LANGUAGE, GRAMMAR, PROSODY

H. M. Hoemigswald writes on Etruscan and Latin month-names (*AJP* 62, 199 ff.), and J. W. D. Skiles studies the commercial vocabulary of

early Latin as exhibited in the comedies of Plautus. (*CJ* 36, 519 ff.), G. Norwood (*ibid.* 421 ff.) points out that the general meaning of *mor* is "in due course," and N. W. DeWitt (*ibid.* 37, 32 ff.) shows that *pro*, *prope*, and *procul* are akin, all signifying primarily "before the eyes." E. Adelaide Hahn summarizes a study of the development of Latin subordinating conjunctions (*PAPA* 71, xxxviii). Y. Malkiel (*Lang.* 17, 99 ff.) discusses the development of the suffix *-ivu* in Latin and the Romance languages, and G. Bonfante (*ibid.* 201 ff.) maintains that the "short" paradigm (*cantai*, *cantasti*, etc.) of the first and fourth Latin conjugations is the "original" form for the "weak" perfect of Romance, and that the "long" paradigm was of later, analogical origin.

E. G. O'Neill, Jr. (in *TAPA* 71, 335 ff.) upholds the thesis that "the inner-metrical structure of Latin, as of Greek, verses is satisfactorily explicable only in terms of the distribution of the final syllables of words." From a study of the hexameters of the *Carmina Epigraphica*, Josephine M. Harris (in *PAPA* 71, xl f.) concludes that word accent was a pronounced feature of these verses.

EPIGRAPHY

G. Bonfante publishes some new Latin inscriptions from Spain (*AJA* 45, 73 ff.). W. A. Oldfather (*AJP* 62, 227 f.) interprets the phrase *in die mortis* of *CIL* VI, 29149 as *in diem mortis* and draws conclusions favorable to Roman marital felicity. W. L. Westermann (*CP* 36, 21 ff.) and H. A. Sanders (*ibid.* 63 f.) comment upon three papyrus documents (P. Yale Inv. 1528, P. Fouad I, 21, and P. Aberdeen 61).

POLITICAL, SOCIAL, AND ECONOMIC HISTORY

G. M. A. Hanfmann contributes an extended review (*AJA* 45, 308 ff.) of G. Säfström's recent work (Lund, 1939) on the Terramare settlements of northern Italy. N. J. DeWitt (*TAPA* 71, 605 ff.) surveys the long history of friendly relations between

Rome and Massilia. *Freedom of Speech in the Roman Republic* (Baltimore, 1940) is a Johns Hopkins dissertation by Laura Robinson. F. M. Wood, Jr. (*AJP* 62, 277 ff.) emphasizes the significance of the military and diplomatic campaign of T. Quinctius Flaminus in 198 B.C. W. E. Gwatkin, Jr. summarizes (in *PAPA* 71, xxxvii f.) a chapter on Gnaeus Pompeius Strabo, father of Pompey the Great. *Tigranes the Great* (Detroit, Mich., 1940) by H. K. Armen is a biography of the Armenian king. Lily R. Taylor (*CP* 36, 113 ff.) discusses Julius Caesar's priestly and civil career up to the year 65 B.C.; Col. D. Armstrong (*CJ* 37, 138 ff.) shows how the elements of the *blitzkrieg*, speed and surprise, won for Caesar comparatively bloodless victories; and K. Scott (*CP* 36, 257 ff.) explains how the chance appearance of a comet in July, 44 B.C. "suggested to Octavian the official form in which the deification of Julius Caesar was to be brought about." In a Chinese historical source of the first century, H. H. Dubs (*AJP* 62, 322 ff.) finds mention of what was probably a group of Crassus' legionary soldiers serving as mercenaries of a Hunnish ruler at his capital in central Asia about the year 35 B.C.

L. R. Shero discusses "Augustus and His Associates" (*CJ* 37, 87 ff.), and (*CP* 36, 30 ff.), A. E. Pappano re-examines the meagre sources for an account of Agrippa Postumus. R. S. Rogers (*TAPA* 71, 532 ff.) finds evidence that Tiberius, contrary to Augustus' policy, insisted upon the Senate's sharing responsibility with him for the control of the army. V. M. Scramuzza surveys the abundant epigraphical evidence that shows the special care which Claudius lavished upon the provinces and the provincials' appreciation of his benefactions (*HSCP* 51, 261 ff.). Mason Hammond (*ibid.* 137 ff.) suggests that Septimius Severus' bureaucratic policies "were dictated not only by his personal prejudices and ambition but also by reasons of sound policy," and R. M. Haywood (*TAPA* 71, 175 ff.) finds no sufficient proof that this

same emperor showed favoritism toward the Africans nor evidence that the Africans felt special enthusiasm for him as a person. Elsa R. Graser (*ibid.* 157 ff.) discusses the significance of several fragments of Diocletian's Edict. *Christian Attitude towards the Emperor in the Fourth Century Especially as Shown in Addresses to the Emperor* (Columbia Univ. Press, 1941) is a monograph by K. M. Setton.

R. V. Cram (*HSCP* 51, 73 ff.) provides "a definitive list of the Roman censors" down to 27 B.C., together with some observations on the political importance of the office, and (*CB* 17, 46 ff.), A. C. Johnson sketches the history of the Roman dictatorship. C. C. Starr, Jr. is the author of *The Roman Imperial Navy, 31 B.C.-A.D. 324* (Cornell Univ. Press, 1941). J. F. Gilliam (*TAPA* 71, 127 ff.) explains what is meant by the *ordinarii* and the *ordinati* of the Roman army. L. C. West re-examines the evidence for the alleged varying ratio of gold to silver in the 3rd and 4th centuries of our era (*AJP* 62, 289 ff.).

R. M. Geer has published a textbook entitled *Classical Civilization: Rome* (Prentice-Hall, Inc., 1940). M. Ginsburg (*TAPA* 71, 149 ff.) contributes a discussion of Roman military clubs and their social functions, and S. L. Mohler (*ibid.* 262 ff.) discusses the formal education of slaves in the Roman Empire. E. W. Bowen writes on "The New Woman in Ancient Rome," (*CO* 18, 20 ff.). J. Hammer is responsible for an entertaining essay (*ibid.* 18 ff.) on Roman beauty culture and for another (*ibid.* 19, 16 f.) on acrobats, jugglers, and various other professional performers of Antiquity.

PHILOSOPHY AND RELIGION

Kurt von Fritz is the author of *Pythagorean Politics in Southern Italy: An Analysis of the Sources* (Columbia Univ. Press, 1940). Eva M. Sanford's study of the influence of the Sibylline books in the adaptation of cult and ritual to the changing character of the Roman state and

people is summarized (PAPA 71), I. W. F. Snyder (YCS 7, 223 ff.), presents the epigraphical evidence for the observance of public anniversaries in the first three centuries of the Empire, and R. O. Fink, A. S. Hoey, and W. F. Snyder (*ibid.* 1-222) furnish a long article, with introduction, text, and commentary, on the *feriale Duranum*, a religious calendar of about 225 A.D. R. Arbesmann cites examples of fasting and abstinence mentioned in classical writers (CB 16, 47 f.). CB 17 devotes several pages (52 ff.) to a critical appraisal of the iconoclastic views presented by B. Farrington's *Science and Politics in*

the Ancient World (Oxford Univ. Press, 1940).

MISCELLANEOUS

A. W. Van Buren's "News Items from Rome" (AJA 45, 451 ff.) is a valuable report, with photographic illustrations, of recent archaeological developments in Rome and Italy. Bibliographical information in the various fields of Roman studies is supplied by the documented lists of "Recent Publications" and the "Abstracts of Articles" in *CW* and by the lists of "Recent Books" and of "Classical Articles in Non-Classical Periodicals" that alternate in *CJ*.

GREEK LITERATURE

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The following volumes have been published since the last report: *Athenaeus, The Deipnosophists* (vol. 7), C. B. Gulick; *Dio Chrysostom, Discourses* (vol. 3), J. W. Cohoon and H. L. Crosby; *Dionysius of Halicarnassus, The Roman Antiquities* (vol. 3), E. Cary; *Manetho, W. G. Waddell*, and *Ptolemy, Tetrabiblos*, F. E. Robbins; *Minor Attic Orators* (vol. 1), K. J. Maidment; and *Procopius* (vol. 7), H. B. Dewing and G. Downey.*

LANGUAGE, LITERATURE, AND LITERARY CRITICISM

R. B. Woolsey analyzes the technique of Homer in the repeated narratives in the *Odyssey* and finds it deliberate and artistic (CP 36, 167 ff.). W. F. J. Knight finds integration of Homeric and Hesiodic elements in the *Hymn to Apollo* (AJP 64, 302 ff.).

* Abbreviations: *AJA*, *American Journal of Archaeology*; *AJP*, *American Journal of Philology*; *CJ*, *Classical Journal*; *CP*, *Classical Philology*; *CW*, *Classical Weekly*; *HSCP*, *Harvard Studies in Classical Philology*; *HTR*, *Harvard Theological Review*; *Hes.*, *Hesperia*; *PQ*, *Philological Quarterly*; *TAPA*, *PAPA*, *Transactions, Proceedings of the American Philological Association*.

J. E. Harry, in *Revue de Philologie* (14, 215 ff.), points out the complex basis of Antigone's appeal (ll. 486 ff.) to a higher law than that of Creon. H. G. Mullens contends that Euripides in the *Hercules Furens* has consciously made the experiment of expressing in one play a whole trilogy of the Aeschylean type (CJ 36, 229 ff.). In "Divine Violence and Providence in Euripides' *Ion*," (TAPA 71, 587 ff.), F. M. Wassermann finds more honor paid to Apollo than is commonly admitted by the critics. L. A. Post contributes two articles on Menander: "Notes on Menander" (AJP 64, 460 ff.) and "Woman's Place in Menander's Athens" (TAPA 71, 420), which frees the wife of New Comedy Athens from her position of traditional opprobrium. C. W. Keyes examines half-sister marriage in New Comedy and the *Epidicus* and finds no evidence for a marriage of *homopatroi* (TAPA 71, 217 ff.). A dissertation by J. N. Truesdale, *A Comic Prosopographia Graeca*, classifies comic proper names (Duke Univ. 1940).

F. Solmsen compares the Peripatetic influence on later theories of rhetoric with the Isocratean element

(*AJP* 62, 35 ff.; 169 ff.). R. C. Flickinger suggests new readings for a famous crux, *Arist. Poetics* 1460 b 15-26 (*PQ* 19, 321 ff.). C. Murley (*TAPA* 71, 281 ff.), charts the Sicilian themes common to the *Phaedrus* and Theocritean pastoral. W. Allen denies that the epyllion was a definite genre recognized by the ancients (*TAPA* 71, 1ff.). An excellent article with many contributions in passing in the field of the fable is "The Origin of the Epimythium" by B. E. Perry (*TAPA* 71, 391 ff.). C. B. Menezes discusses Longinus' attitude toward the conventional theories of art as imitation (*CJ* 36, 346 ff.). W. Allen suggests that Longinus wrote *On the Sublime* not as literary criticism but as a practical help in the study of rhetoric (*AJP* 62, 51 ff.). F. Solmsen attempts the redistribution of the works of the Corpus Philostratum between the younger and the elder Philostratus (*TAPA* 71, 556 ff.). Among other titles here are: A. P. Dorjahn, "Demosthenes' Reply to the Charge of Cowardice" (*PQ* 19, 337 ff.); H. Bloch, "Herakleides Lembos and his Epitome of Aristotles' Politeiai" (*TAPA* 71, 27 ff.); L. F. Smith, *The Genuineness of the Ninth and Third Letters of Isocrates* (Columbia Univ. Diss., 1940). W. D. Chamberlain has written *An Exegetical Grammar of the Greek New Testament* (Macmillan, 1941) in narrow compass (233 pp.) and not entirely successful. M. G. F. Ventris (*AJA* 44, 494 ff.), defines the methods of procedure by which he believes the interpretation of Minoan linear script could be solved; J. F. Daniel (*ibid.* 45, 249 ff.) takes issue with Ventris on some of his conclusions. T. B. L. Webster studies the general development of Greek sentence structure through the ages (*AJP* 64, 385 ff.).

INSCRIPTIONS AND PAPYRI

Much was accomplished during the year in the publication and interpretation of inscriptions. The following items are among the most important: *Hesperia* 10 (14-90 and 301-401), contains articles by B. D. Meritt, M. Crosby, S. Dow, J. H. Oliver, E.

Schweigert, and W. K. Pritchett on inscriptions of varied provenience and diverse subject matter, with notes, translations, and illustrations, the earliest record of mining leases yet found; fragments of the Athenian Law Code of 411-401; details of the mystic procession of the Elusian Mysteries; etc. B. D. Meritt corrects the Athenian tribute lists of 422-414 from the study of two new fragments from the Nike bastion (*AJP* 62, 1ff.). J. H. Oliver studies an inscriptional list of paeanistae and compares it with the other epigraphical and literary references to such catalogues (*TAPA* 71, 302 ff.).

O. M. Pearl, in an article entitled "Varia Papyrologica" (*TAPA* 71, 372 ff.), gives data on donkey-transport in the Fayum vineyards, the "donkey" as a measure of quantity, and the chlamys as a symbol of civic privilege. W. N. Bates, in "The Euripides Papyri" (*AJP* 64, 469 ff.), lists items from papyri appearing since 1930. In "Notes on O. Mich. 1" (*TAPA* 71, 623 ff.), H. C. Youtie contributes numerous notes and interpretations to the text of *Greek Ostraca in the University of Mich. Coll.*, Part 1 (cf. also "O. Mich. 1. 154" in *AJP* 62, 80 ff.). In "The Oldest Manuscripts of Ptolemaic Maps" (*TAPA* 71, 62 ff.), A. Diller tentatively assigns the maps to Maximus Planudes, that is, not copied from ancient archetypes.

HISTORY AND CIVILIZATION

M. Rostovtzeff has added another important work to his previous volumes in the field of ancient history: *The Social and Economic History of the Hellenistic World* (Oxford Univ. Press, 1941); it is ample in scope, exceeding 1600 pages, and illustrated. W. K. Pritchett and B. D. Meritt, in *The Chronology of Hellenistic Athens* (Harvard Univ. Press, 1940), through the employment of many new inscriptions from the Agora and the correction of many old errors, work out a skeleton chronological framework for the years 307-100 B.C. C. A. Roebuck has traced the history of Messenia in the two centuries before the loss of Greek freedom at Corinth,

Hist. of Messenia (Diss., Univ. Chicago Libraries, 1941). Two other sizable books are: N. Michell, *The Economics of Ancient Greece* (Macmillan, 1940); and F. P. Walbank, *Philip V of Macedon* (Macmillan, 1940).

K. von Fritz has three articles worthy of note under this caption (*Political Science Quarterly* 56, 51 ff.), he shows how in fourth century Athens the conservatives became advocates of one man rule only to oppose this principle a century later; in "Atthidographers and Exegetae" (*TAPA* 71, 91 ff.) he discusses Aristotle's sources for the *Politeia Athenaiou* and complements or refutes Wilamowitz's theories; in "The Historian Theopompus" (*Amer. Hist. Review* 46, 756 ff.), he maintains that T. consistently supported an oligarchic form of government. P. Treves (*CP* 36, 321 ff.) shows that Herodotus was not a primitive historian and furnishes excellent evidence for Athenian life in the Age of Pericles. In "Solon's Agrarian Legislation" (*AJP* 62, 144 ff.), N. Lewis devotes his attention to land tenure and alienability and the effects of Solon's legislation.

In "Medizing Athenian Aristocrats" (*CW* 35, 39 ff.), C. A. Robinson supports his conviction that the propertied classes in Athens were pro-Persian and deserted democracy at a critical period (cf. M. F. McGregor, *HSCP* supplementary vol. 1, 71 ff.). C. Murley in "Plato's Republic, Totalitarian or Democratic?" (*CJ* 36, 413 ff.), asserts that the individual, rather than any hypothetical political substantive, is the greatest thing to Plato.

L. Pearson reconstructs from historical allusions in the Attic orators a picture of the historical knowledge common among Athenians (*CP* 36, 209 ff.). J. E. Fontenrose traces the distortion of the true Cyrus story in the Greek historians and shows how the Cyrus-legend grew (*PAPA* 71, 34 f.). G. Bonfante, in "The Name of the Phoenicians" (*CP* 36, 1 ff.), declares it of Illyrian origin and traces other relations between Illyria and Phoenicia.

ART AND ARCHAEOLOGY

In the year under review, when excavation was impossible, the publication and discussion of previous finds have expanded the bibliography of the archaeological field to a marked degree. E. P. Blegen's reports, "News Items from Athens" (*AJA* 44, 537 ff. and 45, 446 ff.), summarize the happenings of main interest throughout the Greek world. T. L. Shear reports on the short spring campaign in the Agora of 1940; the site has been prepared for all eventualities of the war: bombproof shelters, duplicate records, etc. (*Hes.* 10, 1 ff.). *Hesperia* (10, Part 3), is entirely given over to "The American Excavations in the Athenian Agora, Twentieth Report," with articles by Frantz, Oliver, Pritchett, Raubitschek, et al. J. H. Young presents topographical and archaeological studies of south Attica (*Hes.* 10, 163 ff.).

Corinth (vol. 1, Part 2), Architecture (Harvard Univ. Press, 1941), by R. Stillwell and others, concerns the remains along the Lechaion Road and the Agora of this American dig. In an important article, W. B. Dinsmoor re-examines the data on the temple of Zeus at Olympia and discusses the monuments associated with the careers of Pheidias and Damophon (*AJA* 45, 393 ff.). L. E. Lord, in "Blockhouses in the Argolid" (*Hes.* 10, 93 ff.), continuing his previous investigations, confirms his earlier view that they were control stations along the ancient roads (cf. *AYB* 1939, 887). The entire number IV of *Hesperia* 9 is given to a résumé of 20 years' digging and study of "The Acropolis of Halae" by H. Goodman. A monograph entitled *The Lion Monument at Amphipolis* (Harvard Univ. Press, 1941) by O. Broneer gives details of the discovery, theoretical restoration drawings, and photographs of the reconstructed monument. D. M. Robinson continues a really important contribution to Greek civilization in *Excavations at Olynthus, Part X: Metal and Minor Miscellaneous Finds* (Johns Hopkins, *Studies in Archaeology*, 31). W. A. Campbell, in "The Sixth Season of Excavation at An-

tioch" (*AJA* 44, 417 ff.), reports especially on the remarkable mosaics at Daphne. C. Hopkins imagines that the Dura-Europos frescoes may form a significant link between Hellenistic painting and that of India and China (*AJA* 45, 18 ff.). *Hagia Sophia* (Ill.), by E. H. Swift (Columbia Univ. Press, 1940), is a valuable monograph on this church.

P. V. C. Baur has published, with outline and unrolled drawings and general remarks on technique, the "Megarian Bowls in the Stoddard Collection" at Yale (*AJA* 45, 229 ff.). *Greek Walls* by R. L. Scranton (Harvard Univ. Press, 1941) gives a helpful classification and attempted chronology of Greek masonry. P. Kahane outlines the development of Attic geometric pottery, dividing it into four, 50 year periods (*AJA* 44, 464 ff.). W. Schwabacher presents a long, carefully documented study of Hellenistic relief pottery from the Ceramicus (*AJA* 45, 182 ff.), and S. S. Weinberg answers the question "What is Protocorinthian Geometric Ware?" largely from materials found at Corinth (*AJA* 45, 30 ff.). G. M. A. Richter presents data on some recent important acquisitions of the Metropolitan Museum (*AJA* 44, 428 ff.; 45, 363 ff.; *Bulletins of the Metro. Mus.* 36, 122 f.). A discussion of the origin of decorative stucco by N. C. Debevoise is found (*AJA* 45, 45 ff.).

PHILOSOPHY AND RELIGION

W. A. Oldfather has contributed 19 pages of significant notes on the monumental *Scholια Platonica* (ed. W. C. Greene, *CP* 36, 371 ff.). K. von Fritz, in *Pythagorean Politics in Southern Italy* (Columbia Univ. Press, 1940) sifts out what is certain in the confused tradition of the Pythagorean order as a political party. R. P. McKeon, in "Plato and Aristotle as Historians" (*Ethics* 61, 66 ff.), presents a study of method in the history of ideas, and in "Aristotle's Conception of Moral and Political Philosophy" (*ibid.* 61, 253 ff.) declares that to Aristotle ethics and politics are two parts of a single science. G. R. Morrow writes "On the Tribal Courts

of Plato's 'Laws'" (*AJP* 64, 314 ff.). C. Shute considers *The Psychology of Aristotle: An Analysis of the Living Being* (Columbia Univ. Press, 1941). Two translations in this field are L. Cooper, *On the Trial and Death of Socrates*, with introduction and prefatory note to the selections and R. P. McKeon, *The Basic Words of Aristotle* (Random House, 1940).

J. B. McDiarmid, in "Theophrastus on the Eternity of the World" (*TAPA* 71, 239 ff.), finds T. the source of Philo's similar work; the same writer offers some remarks on Heraclitus (*AJP* 64, 492 ff.). Corrections of the misunderstandings of Giussani, Hicks, Ernout, and Bailey on passages in Epicurus are offered by N. W. DeWitt (*CP* 36, 365 ff.). W. J. Oates collects in one volume, *The Stoic and Epicurean Philosophers* (Random House, 1940), their complete works in well-known translations. E. R. Goodenough writes *An Introduction to Philo Judaeus* (Yale Univ. Press, 1940), treating of Philo as political thinker, Jew, philosopher, mystic, etc.

In *Greek Popular Religion* (Columbia Univ. Press, 1940), M. P. Nilsson tries to give the changing picture of what Greek religion actually was, neither ignoring nor over-emphasizing primitive elements. According to A. H. Krappe (*CP* 36, 133 ff.), Apollon Smintheus was originally a mouse, and consequently later as a god was connected with all the lore and superstition pertaining to mice. G. W. Elderkin traces in the remains of the Erechtheion evidence for a succession of divinities on the Acropolis: Poseidon, Zeus, Aphrodite, and finally Athena, completely victorious over them (*Hes.* 10, 113 ff. and 125 ff.). I. M. Linforth has published *The Arts of Orpheus* (Univ. of Cal. Press, 1941). A. D. Nock, in "Orphism or Popular Philosophy?" (*HTR* 33, 301 ff.), suggests that phrases of popular philosophy are often wrongly given an Orphic origin. The Greek rites of stealing connected with the cult of Orthia, etc., are explained as sacred magic by H. J. Rose (*HTR* 34, 1 ff.). In *Mélanges Dussaud* (1, 281 ff.), M.

Rostovtzeff discusses "Le Gad de Doura et Seleucus Nicator," with sidelights on king-cult. L. B. Lawler has several articles dealing with the dance and cult (*TAPA* 71, 230; *CP* 36, 142 ff.; *CJ* 37, 94 ff.). M. P. Nilsson shows the interaction of Jewish and Greek ideas in the last two centuries B.C. in *The Historic Hellenistic Background of the N. T.* (Harvard Univ. Press, 1941).

MISCELLANEOUS

Two numbers of *HSCP* (vol. 61 and supplementary vol. 1), are devoted to studies in honor of W. S. Ferguson. Since the history and institutions of Athens have been his chosen field the essays of the supplementary volume have centered upon Athens, and the regular volume is also composed largely of articles on the Greek side. These studies vary in scope, size, and quality, but, on the whole, are not unworthy of the distinguished scholar to whom they are presented. *Greece and the Greeks* (Macmillan, 1941) by W. Miller is a survey of Greek civilization for the young; with its gush and antic colloquialisms ("ton-social artist" etc.), it will offend even

the young—a lesson which our popularizers seem never to learn. *A Short History of Ancient Civilization* by T. B. Jones (Harper, 1941) devotes one-third of its space to Greece; political and military history is subordinated. In "Caeli Enarrant" (*HTR* 34, 163 ff.), A. S. Pease sketches the use of the teleological argument by great Greek and Roman thinkers and its adoption by leaders of Jewish and Christian thought.

In the death of E. T. Newell, the brilliant and indefatigable numismatist, American scholarship has suffered an incalculable loss. His last work, *The Coinage of the Western Seleucid Mints from Seleucus I to Antiochus III* (Amer. Numis. Society, N. Y., 1941), complements the studies of recent years on various Seleucid Mints (cf. *THE AMERICAN YEAR BOOK*, 1939, 888). J. M. Harris reports on coins found at Corinth, 1936-1939, and sketches the commercial history of this city on the basis of more than 50,000 coins found there since 1896 (*Hesperia*, 10, 143 ff.). P. A. Clement redates the coins of seven series of autonomous Greek coins (*AJP* 62, 157 ff.).

SEMITIC LANGUAGES AND LITERATURES

By ARTHUR JEFFERY

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GENERAL

Results of research and reviews of new material continue to be published in the *American Journal of Archaeology*, *American Journal of Semitic Languages and Literatures*, *Biblical Archaeologist*, *Bulletin of the American Schools of Oriental Research*, *Hebrew Union College Annual*, *Jewish Quarterly Review*, *Journal of the American Oriental Society*, *Journal of Biblical Literature*, and *Proceedings of the Jewish Historical Society*. A notice from the University of Chicago states that this is the last year in which the *AJSL* will appear under its old title. Its growing occupation with Anatolian, Iranian, and

other cultures which are not Semitic, though of great interest to the Semitist and Biblical scholar, has led to change in name to *Journal of Near Eastern Studies*.

During 1941 a group for the study of Hamitic and Semitic linguistics was formed, though plans for its operation and affiliations are still somewhat uncertain. The group hopes to publish from time to time studies and notes in this field, as the similar organization in France did in that country before the present war.

Among books of general interest in this field may be mentioned Cyrus Gordon's *The Living Past*, which presents a brightly written account of

the author's association with a number of different archaeological enterprises concerned with various sections of the Semitic East. The larger book of Millar Burrows, *What mean these Stones?*, attempts to explain in untechnical language the significance of the work being done in the Near East by the excavators and archaeologists. Professor Albright's former students have combined to publish an *Indexed Bibliography*, which will make possible easy reference to his numerous writings.

OLD TESTAMENT

Perhaps the most important book of the year is R. H. Pfeiffer's *Introduction to the Old Testament* (Harpers), a closely printed volume of 917 pp. containing a summary of developments in Old Testament study, and differing from most Introductions in giving more space to literary appreciation of the documents and to separate characterization of the individual sources into which documents are analysed. W. A. Irvine has issued a new and revised edition of J. M. Powis Smith's *The Prophets and their Times* (Chicago). J. Morgenstern's two volumes of *Amos Studies*, which really cover a wide field of Biblical study, have been issued by the Hebrew Union College. In *JBL* for June, H. G. May has re-emphasized the importance of modern archaeological research for the understanding of the patriarchal period, and in particular illustrates how new material has revealed much to illumine the patriarchal conception of their God, whom they called El. In the same journal for September, Beatrice A. Brooks discusses a number of words in the Old Testament that may be indicative of functionaries of the Fertility Cult. Perhaps mention should be made of David Daiches' *The King James Version of the Bible: an Account of the Development and Sources of the English Bible of 1611, with special Reference to the Hebrew Tradition*, since his book deals mostly with the Old Testament section.

PALESTINIAN ARCHAEOLOGY

G. Ernest Wright in *JBL* for March, after taking issue with popular text-books which describe the life of Israel from the literature without adequate appreciation of the results of archaeology, gives some examples of what light these finds can shed on the period of the Judges and the early Monarchy, and in the *BA* for May he discusses the possibility of reconstructing a picture of Solomon's temple on the basis of archaeological evidence recently acquired. In *AJSL* No. 3, Emil G. Kraeling makes a further contribution to the Habiru question in an essay on *The Origin of the Name Hebrew*. Nelson Glueck has a report on archaeology and the Bible in the *Yearbook* for 1941 of the Conference of American Rabbis, and on the general progress of the archaeology of Palestine and Transjordan in the *American Journal of Archaeology* No. 1.

MESOPOTAMIA

E. R. Lacheman has continued his study of Nuzi Geographical names in *BASOR* No. 81. A volume of *Contracts from Larsa dated in the Reign of Rim-Sin* was edited by David E. Faust (Yale Oriental Series, Babylonian Texts Vol. VIII), and J. P. Hyatt published a study on *The Treatment of Final Vowels in Early Neo-Babylonian* (Yale Oriental Researches, vol. XXIII.) Samuel N. Kraemer of the University of Pennsylvania announced the discovery among the cuneiform tablets there of new materials related to the Gilgamesh Epic and the Epic of Creation. In *JAOS* No. 3, Herbert Liebesny assembled the material in the Nuzi documents illustrating legal procedure in the Courts of that period.

In the related field of the history of the ancient Near East, Robert S. Hardy has studied the history of the Old Hittite Kingdom, in *AJSL* No. 2, and in No. 3 of the same journal, George G. Cameron attempts a reinterpretation of the puzzling chronology of Darius and Xerxes in Babylonia, while Richard

A. Parker takes up the related problem of Persian and Egyptian chronology as concerns Darius.

EGYPT

To the vexed question of Egyptian dependence on Mesopotamian culture, an important contribution is made by Henri Frankfort in *AJSL* No. 4 in a study on the monumental architecture of Egypt. In No. 3 of the same journal, John A. Wilson publishes and translates an inscription to the ram-headed god Khnum that was found at Megiddo, and which forms the basis for some notes on the contacts between the Middle Egyptian Kingdom and Asia. In *BASOR* Nos. 81, 83, W. F. Albright gives some account of the new body of Egyptian imprecatory texts which are being edited by Posener and which would seem to promise important additions to our knowledge of the topography of Canaan as well as to the history of Egypt. Albright's conclusions as to the vocalization of Egyptian Syllabic orthography were challenged by W. F. Edgerton in a paper in *JAOS* No. 4, which opens up again this whole important question. In *AJSL* No. 2, H. E. Winlock has a study of the Theban graffiti from the rocks above the royal temple at Deir al-Bahri.

HURRIAN

In *AJSL* No. 4, Pierre M. Purves contributed a study of the *Hurrian Consonantal Pattern*, but the epoch-marking work in Hurrian studies is the *Introduction to Hurrian* by E. A. Speiser, which appears as the *Annual of the American Schools of Oriental Research* for 1940-1941. This contains the Introduction, Phonology, and Grammar, and will be followed at no long interval by the volume containing the texts and the Glossary.

UGARITIC

Geo. A. Barton in *JBL* (Sept.) assembles the information in the texts concerning Danel, which he thinks make clear that he was an early hero of Galilee. In *BASOR* 82, W. F. Albright gives a re-examination of

two of the letters from Ugarit, the Akkadian letter from the king of Carchemish and the message of Ewiri-shar, while in No. 83 he gives a new interpretation of the text of Anath smiting Lotan, the primeval serpent. The question of the place of Ugaritic among the Semitic languages is argued by A. Goetze in *Language* for April-June; he objects to the common view that it is a Canaanitish dialect, and wishes to class it as Amurrite (Amaritic).

ARAMAIC

Moses Marcus' *Practical Grammar of the Babylonian Talmud*, consisting of a selection of Aramaic texts vocalized and grammatically analysed, with a vocabulary, has been edited by Ralph Marcus and published by reproduction from typescript. Raymond A. Bowman, in an article "An Aramaic Journal Page" in *AJSL* No. 3, discusses with new photographs some fragments from Memphis published in 1931 by Aimé Giron, which he thinks may come from the journal of the Memphis arsenal. In *AJSL* No. 4, in "The Old Aramaic Alphabet at Tell Halaf," the same author re-examines the epigraphical evidence and finds grounds for dating it in the 8th or late 9th century instead of in the 12th as held heretofore.

HEBREW

An application of modern principles of general linguistics to Hebrew has been attempted by Zellig S. Harris in *JAOS* No. 3 in an analysis of "The Linguistic Structure of Hebrew." In the more restricted field of grammatical studies, H. M. Orlinsky has examined the "Cohortative and Jussive after an Imperative or an Interjection" in *JQR* XXXI and XXXII, and Mayer G. Slonim the "Substitution of masc. for fem. pronominal suffixes in the Hebrew Bible," in *JQR* XXXII, in which volume also Wm. Chomsky outlines a "History of the Vowel System in Hebrew." In *AJSL* No. 2, W. E. Staples raises the query as to whether there are in the Hebrew Bible traces of determinatives such as were in

INDO-EUROPEAN LINGUISTICS

common use in writing both Egyptian and Cuneiform. Ralph Marcus, in *JBL* No. 2, makes a further contribution to the relation of Hebrew to Canaanite in connection with its consonant *Sin*. Pinchos Wechter discusses, in *JAOS* No. 3, "Ibn Bārūn's Contribution to Comparative Hebrew Philology," giving a preliminary account of this important writer whose *Book of Comparison* he has edited and which is ready for publication.

RABBINIC

The outstanding event in Rabbinic studies was the completion of the first three volumes of Louis Ginzberg's *Commentary on the Palestinian Talmud*, which mark an epoch in the study of this material. The octocentennial volume in celebration of Maimonides, entitled *Essays on Maimonides*, has been edited by Salo W. Baron, and contains two chapters of homage and five essays, all of which had been prepared for the Maimonides celebration five years ago. Under the title *Otzer Hasotah*, H. E. Revel has published a critical edition of the Hilchoth Sotah from

Maimonides' *Mishnah Torah*. L. Finkelstein's essay on the *Sources of the Tannaitic Midrashim* has been reprinted from *JQR* XXXI No. 3, and in *JQR* XXXI, XXXII there is a study by Philip Birnbaum on *Yefet ben 'Ali and his Influence on Biblical Exegesis*, which is a useful contribution to the study of this Karaite exegete. During 1941 appeared the fourth volume of M. Higger's *Otsar ha-Baraitot*.

ARABIC

A new edition of P. Hitti's *History of the Arabs*, with numerous corrections and emendations, has appeared. In the field of Arabic epigraphy, W. H. Worrell published in *AJSL* No. 2 four Safaitic Graffiti which were found in Transjordan in 1933, and in the *Moslem World* for October, F. V. Winnett examined a number of inscriptions in which he thinks can be found the name of Jesus. Nabih Fari's edition of the *Iklil* of al-Hamdani forms Vol. VII of the Princeton Oriental Texts. In the *Moslem World* for January, E. E. Calverley has a useful Bibliography for Arabian Philosophy.

INDO-EUROPEAN LINGUISTICS

By GEORGE S. LANE

ASSOCIATE PROFESSOR, UNIVERSITY OF NORTH CAROLINA

THE LINGUISTIC SOCIETY AND THE INSTITUTE

The Seventeenth Annual Meeting of the Linguistic Society was held at Providence, R. I., Dec. 30-31, 1940. About 100 members were in attendance. A total of 32 papers were offered at the sessions.

The Linguistic Institute was held under the joint auspices of the Linguistic Society of America and the University of North Carolina at Chapel Hill, from June 12 to July 19, 1941. As had previously been the practice at Ann Arbor (*cf.* THE AMERICAN YEAR BOOK, 1940, p. 939), the staff consisted of members of the local University faculty offering suit-

able courses and of special scholars brought in from other institutions. These visiting instructors included E. H. Sturtevant (Yale), R. G. Kent (Pennsylvania), Hans Kurath (Brown), F. Edgerton (Yale), E. A. Speiser (Pennsylvania), C. F. Voegelin (Indiana), Miles Dillon (Wisconsin), J. M. Cowan (Iowa), and Yuen Ren Chao of the American Council of Learned Societies. Innovations in instruction in Indo-European Linguistics at this session were notably courses in Tocharian by Professor Lane, and in the Indo-Hittite Laryngeals by Professor Sturtevant (see below).

The attendance at the Institute was

good, some 60 students working for graduate credit as well as a score of persons already possessing the doctorate. The American Council of Learned Societies generously awarded a number of scholarships for study at the Institute.

Plans are now being made for the second session of the Institute at Chapel Hill in 1942. The director will again be Professor U. T. Holmes of the University of North Carolina. Of particular interest will be the work in Hittite offered by Professor Goetze and in Pali by Professor Edgerton.

THE LARYNGEAL HYPOTHESIS

The importance of the "laryngeal hypothesis" in Indo-European linguistic research was emphasized this year by the numerous articles dealing with its various phases. Professor E. H. Sturtevant of Yale University, the chief American proponent of the theory of Indo-Hittite laryngeals, published three important investigations: "The Indo-Hittite and Hittite Correspondences of Indo-European *a*" (*Language*, 17, 181-8) is a summary of the evidence that Indo-Hittite reduced vowel + laryngeal becomes IE *a* ("schwa"); "The Indo-European Voiceless Aspirates" (*ibid.*, 1-11) would derive the greatly disputed IE voiceless aspirated stops from Indo-Hittite voiceless stops followed by zero grade of bases ending in any of the first three laryngeals, *e. g.* Grk. ἰσθησι represents full grade IH* *sta*? —but Skt. *tisthati* shows IH* *st*? — (with second laryngeal); "Greek Adjectives in -ΑΙΟΣ from Indo-European -*ahyos*" (*Class. Phil.*, 36, 356-64), explains the retained intervocalic -*y* in the Greek adjective suffix -*aos* as long (voiceless?) *y* due to an original preceding (laryngeal) *h*. A parallel development in Germanic of -*hy*- and -*hw*- is proposed by H. L. Smith, Jr., "The *Verschärfung* in Germanic" (*Language*, 17, 93-8) as the cause for the sporadic doubling of intervocalic *y* and *w* and further "*verschärfung*" in North and East Germanic. W. M. Austin, "The Prothetic Vowel in Greek" (*ibid.*, 17, 83-92) explains so-called prothesis as due to retention of

reduced grade vowel in initial syllable of dissyllabic bases beginning with first, third, or fourth laryngeal. The general understanding of the laryngeal hypothesis and its implications for the historical phonology of Indo-European has been greatly advanced among the younger scholars, not hitherto connected with Yale, by Professor Sturtevant's course in the Linguistic Institute (above). Independent of Professor Sturtevant's school, is Professor L. H. Gray of Columbia University whose book *Foundations of Language* (New York, 1939; *cf.* THE AMERICAN YEAR BOOK, 1940, p. 939) contained a summary sketch of his system of laryngeals, based apparently for the most part on that of the Polish scholar Kurylowicz. Professor Gray presents a more detailed view of this system in his article "The Indo-European Base **do*-, **do-ie*-, **do-ye*-, **do-ze*-" (*Am. Jour. of Phil.*, 62, 476-84) where the derivatives of the base **dō*- 'give' are examined.

GENERAL

Problems concerning the home of the Indo-Europeans and their ethnology are reviewed again by E. H. Philippson, "Der Stand der Indogermanenfrage und der Ursprung der Germanen" (*Germ. Quart.*, 14, 142-54). Philippson argues (after Schrader) for the start of IE migrations from southeastern Europe, chiefly on ethnological and archeological grounds, but with little recourse to linguistic paleontology (Schrader's main thesis). Of interest to the Indo-Europeanist, though not primarily intended for his use, is M. H. Liddell's monograph *The Elements of Sound and their Relation to Language* (Urbana, 1940). This remarkable combination of experimental phonetics and linguistics by the former professor at Purdue University was published posthumously. Two more reviews of Professor Gray's book, *Foundations of Language* (*cf.* above) have appeared, one by E. H. Sehrt (*Germanic Rev.* 16, 72-3), the other by R. G. Kent (*Class. Week*, 34, 249-51).

INDO-IRANIAN AND TOCHARIAN

Two phonological studies on Sanskrit have appeared: A. H. Fry, "A Phonemic Interpretation of Visarga" (*Language*, 17;194-200), an attempt to place the sound (or sounds) written by the symbol transcribed *h* in the Sanskrit phonemic system; and G. V. Marsh, "The Voiced Sibilants in Sanskrit" (*JAOS*, 61;45-50), a detailed discussion of the treatment of original *s* before voiced sounds with hypothetical stages of development. A. K. Coomaraswamy, "Lila" (*ibid.*, 98-101) presents an exhaustive semantic study of this late Sanskrit word for 'play' and its group. The article by Helen M. Johnson, "Grains in Medieval India" (*ibid.*, 167-71) will be of interest to the student of Indo-European antiquities. Professor Gray attacks some difficult problems of Avestan paleography and phonetics in "On Avesta \acute{s} =*árt*, *řt*, *ōi* = *ai*, and *ā*=*ā(h)*" (*ibid.*, 101-4). The summary by G. S. Lane, "Tocharian" (*Class. Week*, 34;194-9) is intended to give some idea of the present state of Tocharian studies by presenting a brief historical and comparative sketch. It is intended primarily for students of the Classics.

GREEK AND LATIN

Professor G. Bonfante in "Some New Latin Inscriptions from Spain" (*Am. Jour. of Arch.*, 45;73-80) publishes seven short inscriptions from the photographs of Dr. Taracena, publication of which, begun in the Spanish journal, *Emerita*, was interrupted by the civil war. The same scholar in "The Latin and Romance Weak Perfect" (*Language*, 17;201-11) contends that the "short" Latin perfect of the first and fourth conjugations is the older and of IE origin. H. M. Hoenigswald presents two studies of interest to Latinists—"On Etruscan and Latin Month-Names" (*AJPh.*, 62;199-206) and "The Epicharmian Title *Δῶρος καὶ Αὐρύλα*" (*Language*, 17;247-9), contends that the suffix *-va* is not Siciliote Greek but rather borrowed from Latin. Of some interest to the linguist also is Marjorie M. Milne's semantic study "The Use of *ῥοπέω* and Related Words" (*Am. Jour. of*

Arch., 45;390-8). Professor L. H. Gray in "The Hesychian Gloss *γοῦρα*: *ols* 'Sheep'" (*AJPh.*, 62;89-91) would read initial F for Γ and relate the form to *ols*, Lat. *ovis*, etc. Bonfante in "The Name of the Phoenicians" (*Cl. Ph.*, 36;1-20) concludes that the Greek *Φοίνικες*, *Φοινίκη* is of Illyrian origin. Professor Kent presents, in "The Greek Aspirated Perfect" (*Language*, 17;189-93), an argument against Sturtevant's theory of laryngeal origin of the aspiration (*Language*, 16;177-82) and holds to the older theory of analogic origin. In the meantime two reviews of Professor Sturtevant's book *The Pronunciation of Greek and Latin* (cf. THE AMERICAN YEAR BOOK, 1940, p. 940) have appeared, one by S. D. Atkins and H. H. Bender (*Language*, 17;258-62), the other by J. Whatmough (*Cl. Ph.*, 36;409-11) (the latter concerned chiefly with the pronunciation of Latin *h*).

GERMANIC

S. Einarsson presents some very valuable corrections in his article "Some Notes on E. Prokosch's *A Comparative Germanic Grammar* with Special Reference to his Treatment of the Scandinavian Languages" (*JEGPh.*, 50;38-47). [For other reviews and discussions of this work cf. THE AMERICAN YEAR BOOK, 1939, p. 893, and 1940 p. 941.] Professor A. M. Sturtevant continues his Norse studies with four articles: "The Neuter Gender of Old Norse *Fljóð* and *Sprund*" (*Language*, 17;255-6), an explanation of the unusual gender (in Norse) of these two poetic words for woman; "Note on the Semantic Development of Old Norse *Frjá* : *Frjá* < Goth. *Frijōn* 'to love'" (*Scand. St.*, 16;194-6); "Some Etymologies of Old Norse Poetic Words" (*ibid.*, 220-5) (treats *Gná* and *Kerti* mythological names; *Hauðr*, *Bjōð*, *Hjarl* 'earth, land, country'; *Gylfi*, *Skyli*, *Stillir* 'king, prince'); "Semantic and Etymological Notes on Old Norse Words Pertaining to War" (*ibid.*, 257-63) [words for 'brave', 'enemy'; etymologies of *skati* 'prince', *innir*, *logðir* 'sword', *hefna* 'avenge']. In "The Indo-European Accent in Swedish" (*JEGPh.*, 50;173-90), M. H.

Roberts argues for the antiquity of the origins of the modern Scandinavian (Norwegian, Swedish) musical accent. O. Springer reviews and rejects Wrede's theory of the interrelationship of the West Germanic dialects in "German and West Germanic" (*Gmc. Rev.*, 16;3-20). C. M. Lotspeich in "Old English Etymologies" (*JEGPh.*, 50;1-4) discusses OE *āglāeca* 'monster', *eolotes* 'foreign journey', *nerhsnawang* 'paradise', *tintrega* 'torture', *endebyrdnes* 'order', *læwede* 'uneducated', and F. Metzger in "OE *tān* : Idg. **dyou-*, *dyoi-*" (*ibid.*, 348) derives the group of OE *tān* 'branch, twig' from the IE base for 'two' paralleling the group of NHG *zweig*. Another contribution to Old English studies is that of H. Meritt, "Three Studies in Old English" (*AJPh.*, 62;331 ff.) which considers: I. The Context for some Latin words in the Harleian glossary; II. An Old English term of waled ornamentation; and III. A ghost word (*oferwyrbe*) and a dark gloss (*breptā*). The *Studies for W. A. Read* (Baton Rouge, 1940) contains an interesting study by H. B. Woolf on "The Naming of Women by Continental Germans." Language Dissertation No. 32 is that of P. Scherer, *Germanic-Balto-Slavic Etyma* (Baltimore, 1940; Yale Diss.), which is an attempt to determine the closer relationship of Germanic and Balto-Slavic

by an examination of their common vocabulary and formative elements (review by G. S. Lane in *Class. Week*, 34;291).

CELTIC, SLAVIC, ALBANIAN

Professor Miles Dillon continues his short lexicographical studies with "Modern Irish *atá sé déanta agam* 'I have done it'" (*Language*, 17;49 f.) [a correction of H. Zimmer in *Zt. f. celt. Ph.*, 3;61] and "Notes on Irish Words" (*ibid.*, 249-53) comments on *conch-end*, *airrechtach*—*tairrechtach*, *airne*. V. Hull, "Old and Middle Irish *do'sná*" (*ibid.*, 152-5) suggests a possible correction of a passage in Meyer's and in Strachan's translations of *Imram Brian*. The discussion by Ch. Donahue of "The Valkvries and the Irish War-Goddesses" (*PMLA*, 56;1-12) is likewise of considerable linguistic interest. G. L. Trager in "Auxiliary Verbs in Russian" (*Language*, 17;151-2), contends (contrary to A. Issatchenko, *Language*, 16;196 ff.) that Russ. *byti* 'be', *pustiti* 'permit', *mogu* 'I can', and *zotéti* 'wish' are true auxiliaries. S. E. Mann in "The Indo-European Semivowels in Albanian" (*Language*, 17;13-23) illustrates the development of IE *ǵ*, *ǵ* to *ur*, *ru*, and *ul*, *lu* respectively as opposed to IE *ǵ*, *ǵ* which give Geg *ân*, *âm*, Tosk *ên*, *êm*.

PERIODICAL PUBLICATIONS

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American Spectator
683 Broadway, New York City.
American Speech
Columbia University Press, New
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Atlantic Monthly
8 Arlington Street, Boston.

Celtic Digest
Columbia University, New York
City.
Classical Journal
Ann Arbor, Mich.
Classical Philology
5750 Ellis Ave., Chicago.
Classical Weekly
4200 Fifth Ave., Pittsburgh, Pa.
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Columbia University Press, New
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DIVISION XXVI

THE ARTS

ARCHAEOLOGY

BY DONALD F. BROWN

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THE NEAR EAST

The expanding theatre of the war brought to a halt most American archaeological activity in foreign parts. American schools in Rome, Athens, Jerusalem, and Baghdad were closed and the staff members sent home with few exceptions.

In Constantinople, Robert L. Van Nice continued his investigations on the church of Hagia Sophia under the direction of William Emerson with a view to collecting existing evidence which would serve as a basis for an authentic restoration of the original form of the monument. Measurement and examination of the critical parts of the building have yielded much new and unsuspected information bearing on the early form and history of the church.

In Syria, Henry Pearson terminated his work for the Syrian government at Byblos where he has been active for the past four years. His forthcoming publication is being partially sponsored by the Oriental Institute of Chicago.

In Egypt, Dr. Reisner continues his researches at the Pyramids.

MEXICO

The National Geographic Society, together with the Smithsonian Institution, had a very active season in Mexico. The high spot of the campaign was the discovery of over 700 jade objects in a mound near the village of Paso del Bote south of Vera Cruz in southeastern Mexico. In-

cluded among the objects were human figures, pendants, axes, beads, and objects of unknown use. This work was done as part of a program for ascertaining the origins of the ancient Indian civilizations of Middle America. The expedition was under the leadership of Matthew W. Stirling, who also reports considerable progress in stratigraphic excavations made at the site of Cerro de las Mesas.

Near Cuatro Cienegas, Coahuila, Mexico, Walter W. Taylor of the National Museum carried on excavations in cave sites. The climate of this region has served to preserve all types of substances. The cave people had no great variety of possessions, but feathers, hair, leather, and all sorts of fibrous and woody artifacts retain identifiable form and lend body to the usual run of less perishable objects of stone and bone. Three stratigraphic groupings of material have been isolated which show affinities with the groupings from the Big Bend region of Texas except in their earliest layers.

In Yucatan, the Stela Platform at Uxmal has been investigated by Dr. S. G. Morley who found the monuments severely injured because of the brush-burning activities during agricultural operations. At Chichen Itza the pottery has been studied by Dr. George Brainerd along with that of other sites in the northern part of the peninsula. A publication is soon expected.

In Jalisco, Dr. Isabel Kelly has carried on a surface survey of the western and southern portions. The sherd material has shown certain cultural affiliations. Autlan polychrome ware remains distinctive and strong numerically.

The National Office for Cultural Relations with Latin America has two expeditionary projects in Mexico. One is in northeastern Mexico, supervised by Gordon Eckholm; the other is in western Mexico and is supervised by Dr. Isabel Kelly.

CENTRAL AMERICA

At Copan in Honduras, Gustav Stromsvik and Robert Burgh continued their work of excavation and restoration in collaboration with the local authorities. Major work was on the Ball Courts and the Jaguar Staircase.

In Nicaragua, the studies of Francis B. Richardson on Middle American sculpture have been side-tracked by the investigation of human footprints found in deeply buried volcanic strata. Very effective aid was rendered to the investigator by President Somosa of Nicaragua.

In Guatemala, reconnaissance work carried on by A. L. Smith has resulted in the discovery of several Ball Courts near Kaminaljuyu. One of the courts has shown analogies to the Court at Copan.

In Salvador, Dimick and Boggs have continued work at Campana San Andres where the principal mound has been shown to consist of superimposed structures of adobe construction.

SOUTH AMERICA

In Ecuador, the School of American Research and the Museum of New Mexico, in coöperation with the University of Southern California and the National Academy of History of Quito, have ended a six-month excavation under the direction of Edwin N. Ferndon, Jr. The site is south of Manabi near the town of La Libertad and was chosen because collections of

sherds made there revealed many types hitherto unpublished in Ecuadorian archaeology.

In Peru, Mrs. M. H. Tschopik of the Peabody Museum, Harvard University is excavating, among other sites, the famous one at Sillustani. Thick Inca levels have been discovered which suggest the possibility of minute subdivisions.

Dr. Irving Goldman of Columbia University has excavated a number of burial sites in Colombia. The tombs are large dome-shaped subterranean structures entered through a vertical shaft with spiral stairways. Polychrome geometric designs are on the walls.

THE ARCTIC

There has been very extensive activity in every section of the United States with the CCC and the WPA furnishing invaluable assistance to museums and universities which have carried out work during this season. The question is whether war will leave enough public funds to carry on this work.

In the Arctic region, Dr. Froelich G. Rainey conducted further investigations for the University of Alaska at the Ipiutak site at Point Hope.

Dr. Frank C. Hibben did reconnaissance work at two areas, one in Cooks Inlet and the coast immediately adjacent to the North, the other in the lower Yukon centering around the town of Koyukuk. A site characterized by a deeply buried occupation level and by Folsom-like points was found in the Cooks Inlet area. In the lower Yukon some indeterminate evidence was found for the Palaeo-Indian culture but no good sites.

SOUTHWEST UNITED STATES

In Arizona, the Museum of Northern Arizona and Bryn Mawr College cooperated on the excavation of pit-house dwellings of late Basket Maker III age near Flagstaff. These houses were buried under the volcanic ash from Sunset Crater, the volcano which

erupted about 885 A.D., an important phenomenon in the prehistory of this section of Arizona. The expedition was under the direction of Dr. Fredericka de Laguna of Bryn Mawr College.

In New Mexico, a joint Laboratory of Anthropology-Colombia University field party investigated pit-houses east of the Aztec ruin at Gobernador. The houses were of six to 12 meters in diameter and were closely associated with surface storage structures. Two of the houses were completely surrounded with stockades of posts.

An expedition sponsored by R. E. Allen and Washington and Jefferson College worked at the Pueblo Pardo ruins with J. H. Toulouse and R. L. Stephenson. Cremation and inhumation burials have been found to be contemporary. The buildings found are of typical cellular Pueblo form built around an open plaza.

Dr. Frank H. H. Roberts, Jr., Bureau of American Ethnology, spent the summer season, June to September, 1941, excavating at a site 10 miles south of San Jon, New Mexico, on top of the escarpment at the edge of the Staked Plains. At this location deposits around the borders of a fossil lake bed contain quantities of bones from both extinct and modern species of bison and from the mammoth. Associated with the bones are various kinds of stone implements. These assemblages occur in stratified levels, and as a result of the excavations a sequence for four types of projectile points has been established. In addition there is evidence for a correlation between various point types and different species of bison. Because of the clearly defined geologic sequence at the site the material obtained has an important bearing on the problem of early occupation in North America. Geologic studies of the site and the adjacent terrain were carried on in conjunction with the archaeological investigations. This phase of the work was under Prof. Kirk Bryan and S. Sheldon Judson of the Department of Geology and Geography, Harvard University. Possibilities at the site were not ex-

hausted and additional work probably will produce further data on this still little known chapter in North American Archaeology.

WESTERN UNITED STATES

In Utah, E. R. Smith of the University of Utah carried on a survey of archaeological remains on the high plateaus in the eastern part of the State. North of Cisco, circular masonry structures were excavated which correlated with Turner Site material of Colorado.

In Colorado, C. T. Hurst completed excavations in Tabeguache Cave, a peripheral Basket Maker site, under the auspices of the Western State College. Dated timbers were found of the years, 348, 361, and 372 A.D.

In Wyoming, Edgar B. Howard worked in the sand dune area near Farson. In the old soil level, beneath the recent sand dunes, he found a number of finely flaked points, known as Yuma points, associated with many bones of the bison.

On the Pacific Coast, Phil C. Orr of the Santa Barbara Museum of Natural History conducted excavations on the site of the ancient village of "Helo" in the Goleta Slough. Four cemeteries were excavated which represented three phases of the third or Canalino culture of this area.

The Mescalitan island site was hurriedly studied during the leveling of the island by construction crews for the new Santa Barbara airport. Much interesting material was turned up by the excavating machines but no opportunity for detailed study was afforded. Material representing the second cultural stratum of the area was recovered.

In the northern Mississippi area, Dr. E. F. Greenman conducted an excavation for the University of Michigan on Manitoulin Island. Dr. Lloyd A. Wilford conducted a field party for the University of Minnesota at Lake Shetek, Tuttle lake, and Fox lake. Woodland sites were uncovered in all areas. There were numerous other summer excavations by various institutions in this area, none of which present material of a startling nature.

EASTERN UNITED STATES

The Hudson Valley Archaeological Survey, headed by Dr. Mary Butler of Vassar College, reports the finding of two outstanding phases of Indian culture along the east bank of the Hudson River. One is characterized

by red slate and quartzite artifacts, the other by chert and bone artifacts. In other portions of New York and Connecticut minor excavations have turned up typical Woodland type artifacts.

PAINTING

By FLORENCE S. BERRYMAN

THE AMERICAN FEDERATION OF ARTS

The greatest event during 1941 in the field of painting or of any other art was the opening of The National Gallery of Art, a description of which superb addition to the nation's cultural resources will be found on page 925. The United States Government's art program revealed no perceptible slackening, despite the increasing tempo of defense activities.

SECTION OF FINE ARTS

The Section of Fine Arts of the U. S. Public Buildings Administration reported 173 contracts for mural paintings completed during the calendar year, and 53 contracts for sculpture, a total of 226 contracts involving an expenditure of \$279,925. At the end of the fiscal year (June 30), the Section issued its detailed report, stating that 250 contracts for mural and sculpture decorations were completed during 1940-41 at a cost of \$324,851, raising the total number of such decorations completed since the Section was started (1934) to 1,057. (See *The American Art Annual*, Vol. XXXV). Of these, 845 were murals for which the total amount expended was \$1,036,380. This work has been done in 903 cities. From 1934 to June 30, 1941, 166 competitions had been conducted by the Section in which 12,210 artists submitted 32,207 sketches; 24 competitions were still in progress in the latter half of 1941.

The first national watercolor competition, held by the Section in the summer of 1940 for the purpose of selecting paintings for the decoration

of the Carville (La.) Marine Hospital, resulted in total sales of 589 paintings for \$17,670. The original Louisiana purchase comprised 300 watercolors for \$9,000 (*THE AMERICAN YEAR BOOK*, 1940). Two additional groups, totaling 150 watercolors, were subsequently purchased by the government for Fort Stanton, New Mexico Marine Hospital, and Public Health Service, Lexington, Ky. Private individuals purchased 139 watercolors from groups exhibited by the Section, at the same price (\$30 each) paid by the Government. The entire proceeds from sales of paintings from this single competition went to the artists.

The first loan exhibition held in the new National Gallery of Art was a group of 200 watercolor paintings from the same competition, which opened May 15, for three weeks and was shown at the Cleveland Museum of Art later. Five smaller groups of watercolors were exhibited elsewhere in Washington, in Falls Church, Va., Ithaca, N. Y., Milwaukee, Minneapolis, and Washington, Conn. during the first half of 1941. A sixth watercolor exhibition was lent to The American Federation of Arts for nation-wide circulation.

Exhibitions of watercolors for Army Camps were arranged by the Section beginning in July with Fort Dix, N.J. "Watercolors for Decoration" (group of 100) was circulated in autumn, 1941.

The large exhibition "48 State Mural Designs" continued to circulate during 1941 visiting various

cities from Decatur, Ill. to Salt Lake City. Two smaller exhibitions of mural sketches, and three of photographs of murals and sculpture, were shown in widely separated cities.

WPA ART PROGRAM

The government's other art program, that of The Work Projects Administration, has embraced since its inception many branches of art. A fundamental objective is the encouragement of public participation in the arts and their integration with daily life. The community art center program carries art to places where few opportunities exist and has engaged local communities' interest and support to the extent of public contributions of more than \$850,000 toward the establishment and operation of 97 art centers and galleries in 22 states. Painting, hence, is but a single phase of much more extensive activities in which more than 8,000,000 persons have participated. Lectures on painting have been given by leading authorities on art; there have been process-demonstrations of easel and fresco painting, and the medium has also been a workshop activity and has been taken up by hobby groups under well-trained leaders. Classes in painting for under-privileged children and adults are held in schools, settlement houses, hospitals, etc. by artist-teachers.

Many groups of paintings have been among the 554 exhibitions circulated throughout the United States by WPA headquarters. To the end of September 1941, these exhibitions had had 2,000 individual showings at community art centers; in addition, there were hundreds of local shows. Public response and interest can be gauged by attendance during a typical month (January, 1941) when 474,141 persons attended 313 exhibitions throughout the country.

Creative artists employed on the WPA art program have produced, since its inception, more than 2,250 murals, including not only works in oil and fresco, but also mosaics and photomurals, installed in public build-

ings located in every part of the country. More than 85,151 oil paintings and watercolors have been allocated to public agencies (schools, libraries, hospitals, etc.)

The Index of American Design which constitutes the one great pictorial depository of the American tradition of craftsmanship now includes over 20,737 drawings, many of which are exquisitely painted in full colors. These depict with minute accuracy designs representative of our native arts from early colonial times to the end of the 19th century, as revealed in furniture, ceramics, textiles, and other objects of daily use, and are made available to the public through exhibitions and by reproduction.

ART FOR DEFENSE PROGRAMS

State WPA art projects are working for the military and civilian defense programs. Many portraits of officers have been painted for officers' clubs and similar places. Murals, some permanent and some demountable, have been painted for recreation halls and service clubs. A typical service was the placing of 175 paintings and prints at the Indiantown Gap Military Reservation. The Jacksonville, Fla. WPA Art Center, on request of Army officials, is circulating exhibitions of paintings and prints through 150 recreation halls at Camp Blanding, Pensacola Air Base, and other locations. Art classes have been conducted by the Michigan Art Project for the soldiers at Fort Custer, Battle Creek. In August, an exhibition was held at the Fort Custer Club, comprising portraits, landscape paintings, and other works of art.

The Northern California Art Project received the largest assignment yet turned over to a WPA branch—to furnish complete interior decorations for the new enlisted men's club at Fort Ord. Besides draperies, lighting fixtures, furniture, and a fountain, as well as dinner plates, the decorations include murals in fresco to cover more than 4,000 square feet. The work was done at the re-

quest of the enlisted men themselves, and a sum almost sufficient to defray the entire cost was raised by voluntary donations.

NATIONAL ART WEEK

Although National Art Week, held for the first time in 1940, was officially considered to have justified the activities and enthusiasm of thousands of public spirited people who worked without pay to make it successful, final returns, announced in June 1941, were disappointing. According to the report of the assistant commissioner of WPA, Mrs. Florence Kerr, a little over \$100,000 was made by the sales of over 15,000 exhibits. More than 90% of the objects sold were \$25 or less. The District of Columbia led with \$20,106; Southern California, \$7,772; New York State, \$6,930; New York City, \$5,865; Illinois, \$5,726; Iowa, \$4,301; Michigan, \$4,079, and other states, smaller sums.

The President, who said toward the end of first National Art Week that he felt "justified in recommending that Art Week be made an annual event under the sponsorship of the President," and recommended a decentralized organization to work with the government, proclaimed second National Art Week Nov. 17-23, 1941. Thomas J. Watson was named national chairman, with 500 committees in all states, to direct 1,000 local shows. Approximately 30,000 artists and craftsmen submitted 130,000 works for exhibition.

NEW MUSEUM BUILDINGS AND WINGS

Space for the exhibition and protection of paintings and other works of art increased during the year. The art gallery and school, given to West Palm Beach, Fla. by Mr. and Mrs. Ralph H. Norton of Chicago, opened in February. Marion Sims Wyeth was the architect and Paul Manship sculptor of the new building. In addition to the plant, worth \$500,000, Mr. and Mrs. Norton gave their collection of 145 contemporary American and English paintings and funds for maintenance and operation.

Santa Barbara, Calif. opened an art museum June 5, 1941, which began with a suggestion by painter Colin Campbell Cooper. The new museum, an educational institution and community art center as well as a gallery, opened with an exhibition of "Painting Today and Yesterday," comprising 140 pictures. The museum's first acquisition was a pair of portraits by Gilbert Stuart, presented by Mrs. Charles S. Dennison.

METROPOLITAN MUSEUM OF ART

The Metropolitan Museum of Art, New York City, rehung and redecorated 24 galleries for paintings; the walls are now tinted to harmonize with the canvases, which are arranged in chronological order. The Metropolitan also established a Junior Museum to facilitate its work with 300,000 children of New York City's public, private, and parochial schools. In summer, loans from the Louvre were placed on view "for the duration;" they were selected from works the Louvre lent to the 1939 N. Y. World's Fair—Chardin's "Benedicite," Vigee Le Brun's "Self and Daughter," and other famous works.

NATIONAL ACADEMY OF DESIGN

The National Academy of Design, the majority of whose membership are painters, received a gift from Archer M. Huntington of three buildings at Fifth Avenue and 89th Street. Two underwent reconstruction after a design by National Academician William Adams Delano, to become a home for the Academy; the third was razed for space for outdoor sculpture exhibitions. Besides offices and working space, the new headquarters will have 11 galleries for a rotating exhibition from the Academy's permanent collection of 2,000 works assembled during its 116 years of existence. This is the first permanent home for the Academy since 1898.

BOSTON AND PHILADELPHIA MUSEUMS

The Boston Museum of Fine Arts established a Provisional Acquisitions

Gallery, in which to hang all new purchases; it has the character of a "Luxembourg" for the museum. Experimental and other contemporary paintings will be included, which the artists may want later to change.

The famous John G. Johnson collection, bequeathed nearly a quarter century ago to the City of Philadelphia, was installed in autumn in 20 large well-lighted galleries in the Philadelphia Museum, which had been especially prepared, with tinted walls. The collection of 575 paintings, of which many are outstanding masterpieces, traces the development of European painting from Italian primitives to the 19th century. Since Johnson's death, the collection has been housed in his mansion; for several years, it has been subjected to careful scrutiny with X-ray, ultraviolet rays, and micro-photography to settle debatable attributions and similar points.

MUSEUM ACQUISITIONS

Paintings of many periods as well as other works of art continued to gravitate to permanent collections by means of gifts, bequests, and museum purchases. In addition to accessions mentioned in connection with the National Gallery of Art, new museum openings, etc., many superb works entered long-established collections or institutions.

Italian Renaissance.—The St. Louis City Art Museum acquired its first painting by Veronese, "Christ and the Woman of Samaria," a canvas once owned by the late Duke of Marlborough. Del Sarto's "Holy Family with Saints John and Elizabeth" was given to St. Patrick's Cathedral, New York City by Major Edward Bowes.

Flemish.—Important Flemish paintings included "St. Hieronymus" by Joos van Cleve purchased by the Hackley Art Gallery, Muskegon, Mich. The Boston Museum of Fine Arts acquired a major work by Rubens, "Head of Cyrus Brought to Queen Tomyris," from the collection of the Earl of Harewood. This well-

documented painting was once owned by Queen Christina of Sweden.

Early American additions were comparatively numerous. A superb pair of portraits by Copley was presented to Yale University's Art Gallery by its Associates in Fine Arts. Painted in 1769 of Isaac Smith and his wife Elizabeth, they were purchased from the great-great-grandson of the subjects. Copley's portrait of Mrs. Nathaniel Allen (1763) was acquired by the Minneapolis Institute of Arts.

A magnificent collection of 18th century American paintings, drawings, and decorative arts assembled by Mr. and Mrs. Maxim Karolik of Newport, R.I. for the Boston Museum of Fine Arts, was formerly dedicated Dec. 2, 1941 by Governor Saltonstall of Massachusetts. Among 350 items, there are excellent portraits by Copley, including the famous double likeness of Mr. and Mrs. Isaac Winslow, and by Gilbert Stuart, beautifully installed in settings including early American furniture and other arts.

Modern French.—In the category of modern French paintings there were some outstanding acquisitions. The Metropolitan Museum received from Harry Payne Bingham, "Les Demoiselles de Village" by Courbet, and acquired Degas' portrait of James Tissot. The Museum of Modern Art, New York City received as a gift from a trustee seven modern French and American paintings, which it described as the most important group of paintings bestowed upon it since the Lizzie P. Bliss collection. The Modern subsequently acquired its first painting by van Gogh, "The Starry Night." The Société Anonyme, founded in 1920, gave Yale University its collection of more than 450 paintings and sculpture assembled during two decades. These works by artists of 17 countries illustrate every phase of 20th century painting.

PATRONAGE OF PAINTING

Although overshadowed by the extent of work done under government

patronage, each year there is a definite proportion of contemporary painting executed on commissions from state and city governments and private organizations.

A large mural by Leon Kroll for Worcester, Mass., commemorating the heroes of the first World War, was formally presented by the Worcester World War Memorial Commission on May 28, 1941 at the Municipal Auditorium. The mural, depicting an idyllic landscape with many figures, is 30½ feet high by 33 yards long, and covers 2,500 square feet.

Other murals completed under non-Federal auspices included Eugene Zaikine's fresco for the Half Moon Hotel, Brooklyn, New York City, depicting Peter Stuyvesant's appointment as director-general of Nieuw Amsterdam, 1647; Demetrios Kokot-sis' decorations for the Greek Classroom in the University of Pittsburgh's "Cathedral of Learning;" John G. Wolcott's mural in the lobby of the Park Square building, Boston, interpreting the city's development through historic themes little known, instead of the conventional selections; and a mural executed by Will S. Taylor, head of Brown University's art department, as part of the art curriculum, subsequently hung in the Providence Street Jr. High School of Worcester, Mass.; it depicts the bargain of 1674 between Indians and white settlers at Packachoag for the site of Worcester, Mass.

In connection with Kansas' celebration of the 400th anniversary of Coronado's arrival, the first white man to reach the heart of the United States (to be), Albert T. Reid, Kansas-born painter, was engaged by R. C. McCormick of the Broadview Hotel, Wichita, to work on a colossal canvas depicting Coronado's cavalcade, as a publicity feature and educational program. The painting was completed by Reid in his New York City studio and returned to Kansas, where hotels will take it on a tour of the state. Although paid for executing the work, the artist still holds title to it.

EXHIBITIONS

French Loan Exhibit.—Perhaps the outstanding exhibition of the year was the survey of 19th century French painting, a magnificent loan of 70 paintings from 22 European museums (20 in France, headed by the Louvre) and 27 private owners in France and Switzerland sent to South America in 1939 on a good-will tour by the Daladier Government, and secured by Dr. Walter Heil of the De Young Memorial Museum, San Francisco, where it opened Nov. 15, 1940 (see *THE AMERICAN YEAR BOOK*, 1940). Selected by René Huyghe of the Louvre, it comprised paintings from the French Revolution to the present, none of which had been previously exhibited in this country. Expected to remain indefinitely, the exhibition is on circuit; in each city, the paintings from France are supplemented by additional groups. In New York at the Metropolitan Museum, February and March, 1941, where it was the major offering for the season, nearly 60 paintings of the same period had been borrowed from U. S. museums and collectors, and more than 50 watercolors and drawings shown in the original French exhibition in South America, but not in San Francisco. Opening in Los Angeles June 14, it was supplemented by the admirable collection of Edward G. Robinson, comprising 67 paintings.

Toledo Spanish Exhibit.—Other outstanding group shows of old master paintings included the Toledo, Ohio, Museum's third spring exhibition organized by its annual visiting professor—this year, Jose Gudiol, noted authority on Spanish art, assembled what was described as the United States' largest Spanish exhibition, comprising 60 paintings and a number of frescoes covering six centuries, from the Romanesque period to El Greco, Valasquez, and Goya. The Museum was obliged to discontinue the annual professorship with the expiration of the Carnegie Corporation's grant which had financed it for three years.

Knoedler Old Master Show.—An

unusual old master show was that celebrating the 95th anniversary of Knoedler and Company, New York City, selected by Royal Cortissoz, who at the same time completed half a century of art criticism for the *New York Herald* and *Herald-Tribune*. On view in November and December, 1941, 39 canvases ranged from a 10th century Chinese landscape to the late George Bellows, and included rare loans from private collections seldom seen by the public.

Coptic Art in Brooklyn.—The Museum's epochal exhibition of Coptic Art, February and March, included paintings as well as other arts among its 271 exhibits. Many months of preparation convinced those in charge of it that no important show in this field had previously been held either in this country or in Europe.

Goya and Renoir.—Among major exhibitions devoted to single old masters, were that celebrating the 4th centennial of El Greco's birth, held in January at Knoedler Galleries, New York City, comprising 25 paintings valued at \$2,000,000, with all proceeds to the Greek War Relief Association; the largest exhibition of Goya's work assembled in the United States, at the Art Institute of Chicago, in February, comprising 163 paintings, drawings and prints; and the superb Renoir centennial exhibition in the Duveen Galleries, New York City, in November, for the benefit of Free French Relief Committee, which included 86 American-owned Renoir paintings tracing the artist's career from 1864 to 1917.

PERIODIC EXHIBITIONS

The annual, biennial, and other periodic exhibitions which give the American artist his best opportunity, are too numerous to permit exhaustive mention. The 49th annual of the National Association of Women Painters and Sculptors in January had more than 300 works and was hailed as one of the most interesting of its half century of shows. The National Academy's 115th annual in

the spring revealed a more progressive trend. The Corcoran Gallery's 17th Biennial, which opened in Washington, D.C. the same week as the National Gallery, suffered from this "unfair" competition, although the Biennial was a lively show. The Society of Independent Artists, New York City, held its 25th anniversary exhibition in April and May, comprising 800 works. The Cleveland Museum sold 666 exhibits by 136 artists for a total of \$7,400 from its annual in June.

Its famous International interrupted by the war, the Carnegie Institute, Pittsburgh, again turned to American art, with an exhibition in October, confined to painters who had not previously exhibited there; 302 selections were made from 4,812 submitted works. The average age of the exhibitors was 35. Serious subject matter with a marked interest in the Negro, was noted, a preoccupation likewise marked at the Chicago Art Institute's 52nd annual about the same time. Young artists were also favored at the Whitney Museum's annual, devoted to "Artists under Forty," 93 of whom showed 125 paintings.

INDIVIDUAL EXHIBITS

Countless exhibitions were held of works by single artists. Living Americans honored with comprehensive solo shows included Eugene Speicher at the Rehn Galleries, New York City, March, 1941, his first one-man display in seven years; Max Weber, the same month, at the Associated American Artists Gallery, New York City, with 50 paintings widely praised, and from which 15 sales were made; and Leland Curtis, official artist with Admiral Byrd's last expedition to Antarctica, whose paintings and drawings of this virgin territory for artists were first exhibited at Dalzell Hatfield Galleries Los Angeles, spring, 1941, and in November at the Lilienfeld Galleries, New York City. Two of his oils were painted for the Government, and 14 sales were made a few days after the California opening; a large group of Curtis' paint-

ings will be sent on a museum tour in 1942.

Considerable interest was shown in contemporary artists of progressive tendencies, most of them European. In March, in New York City, Lyonel Feininger had a double retrospective of his abstract paintings, inspired by Bach's music, oils at Buchholz and watercolors at Willard Galleries; the 75th birthday of the Russian abstractionist, Kandinsky, was celebrated with a solo show at Nierendorf Gallery; Fernand Leger, French Cubist now in the United States, showed watercolors and drawings at Harri-man Gallery, and Joan Miro, Spanish surrealist, exhibited at Pierre Matisse Gallery. A joint exhibition of paintings by Miro and Salvador Dali opened at the Museum of Modern Art in November, and is to travel during 1942. The same month, a large retrospective of 48 oils and many other works by Eugene Ber-man, a leader of the Neo-Romantic movement, opened at the Boston Institute of Modern Art, and will be shown in succession at five other important museums which cooperated in its organization.

SHOWING OF CHRYSLER COLLECTION

The collection of modern art owned by Walter P. Chrysler, Jr., comprising 341 paintings with extensive representation of Picasso, Braque, Matisse, Leger and other French moderns and valued at \$1,000,000, was first publicly exhibited early in 1941 at the Virginia Museum, Richmond, January to March, and at the Philadelphia Museum to May.

BRITISH EMPIRE SHOWINGS

The British Empire was featured in several important exhibitions. A large display "Britain at War" opened at the Museum of Modern Art in New York City for the summer, after which it toured the United States and Canada. It included paintings and many other media. "The Great Fire of London, 1940" depicted in more than 100 paintings and drawings by artist-members of

the Auxiliary Fire Service sent to the United States by the British Government, with three Auxiliary firemen in attendance, one of them Rudolf Haybrook, a painter of some of the works shown, opened at the National Gallery of Art, Washington, and drew 100,000 visitors in three weeks. It then toured Canada, and reached the Museum of the City of New York in November. A comprehensive exhibition of Australia's art opened at the National Gallery Oct. 1, having been assembled under auspices of the Carnegie Corporation of New York. Loans from Australian museums, collectors, and artists provided 75 paintings, beginning with the country's aborigines' bark paintings, and showing 150 years of white man's work. This exhibition went to the Metropolitan Museum for December, and during 1942 will tour the United States and Canada.

PAINTING, LAW, AND POLITICS

Painting and painters were involved in a number of legal situations during 1941, the most interesting of which occurred in Pennsylvania. A bill introduced Feb. 12, 1941 in the Pennsylvania Legislature, aimed to exempt all private collections given to the Federal Government from the state's 10% transfer tax, but the bill was tabled. Non-inclusion of the magnificent Widener gift in the new National Gallery of Art at its opening caused some speculation as to whether there was any connection between the Pennsylvania bill and the unspecified date of presentation. As matters now stand, if the Widener collection were sent to Washington, the donor would have to pay the sum of \$5,000,000 to the State of Pennsylvania. Many Pennsylvanians, understandably depressed over the loss of the Mellon and Widener collections, regard the 10% tax as the state's only safeguard against transfer of other art treasures by gift to the nation.

Hovsep Pushman brought suit against the New York Graphic Society for the sale of \$7.50 color reproductions of his painting "When

"Autumn is Here," which he had sold to the University of Illinois. The New York Supreme Court's decision, (subsequently upheld by the Appellate Division) was that he could do nothing about it, since he had not specifically retained the right to control reproductions when he sold the original.

Washburn College and its Mulvane Art Museum, Topeka, Kan., which has a permanent collection of American paintings and other works of art, were faced with financial collapse early in the year. Friends of the museum energetically aroused the voters, with the result that the College and Museum were incorporated into the city's system by vote of a large majority.

"GOOD NEIGHBOR" ART EXCHANGES

World-wide spread of war caused marked deterioration in the cultural exchanges which used to be a feature of each year's art history. Exchanges during 1941 were practically confined to the British Empire and Latin America. In addition to the British and Australian exhibitions mentioned above, there was considerable activity with the countries to the South. A "Good Neighbor" exchange of art was affected by Mrs. Doris Stone, director of the New Orleans Arts and Crafts Club; in December, 1940, Mrs. Stone invited artists of Guatemala City and San Salvador to contribute work to an exhibition at the Royal Street Gallery, New Orleans, offering a prize of \$50 for the best exhibits from each country. In January, 1941, New Orleans artists sent to the new International Club Salon in San Salvador an exhibition of southern United States art, the collection later going to Guatemala City and other Latin American centers.

In the spring, International Business Machines Corporation's collection of paintings from the two recent World's Fairs which had toured American museums during 1940-41, and a large collection of prints, were sent to Rio de Janeiro, the first of 16 stops on a tour of Central and

South America. In April, the Metropolitan Museum of Art, New York City, held an exhibition of American paintings, after which the 300 exhibited were grouped in three shows of 100 each and sent to South America; one group opened in Mexico City, another in Buenos Aires, and the third in Bogota, Colombia in June, from which points they traveled elsewhere in Latin America. In exchange, exhibitions of Latin American art are to tour the United States, an arrangement effected by Nelson A. Rockefeller, Coordinator of Commercial and Cultural Relations between the American Republics, with the cooperation of five New York museums: Metropolitan, Brooklyn, Whitney, Modern, and Natural History. An exhibition of "Modern Mexican Painters" selected by Dr. MacKinley Helm opened at Boston Institute of Modern Art in November and will tour American museums in 1942.

ART IN WARTIME

Early in 1941, The American British Art Center, Inc. was opened in New York City to "preserve and encourage the artist in wartime." There are continuous exhibitions by British and American painters and other artists, and the Center also functions as a club house.

A Soldier-Artist Exhibition Center was established in New York City by Contemporary Arts to provide exhibition opportunities for American soldier-artists, solely those who had attained some recognition or achievement in art prior to enlisting or being drafted. A large collection from the first exhibition was taken over for circuit by The American Federation of Arts.

The new Navy YMCA at Norfolk, Va. which opened in July, was decorated by a group of painters directed by Hildreth Meiere; their murals were painted on wall paper to reduce shipping and installation costs, and the artists gave their time as a contribution to service men. They included Rachel Richardson, Edmund Archer, Charles Gilbert,

Domenico Martellito, Albert Radocz, Albert Pels, and Lewis Ross.

The war situation produced unexpected headaches for painters. In early autumn, the government's "priorities" for defense materials practically pre-empted 14 indispensable pigments. The American Artists Professional League and the Rockport Art Association were the first to protest (Protective Coating Division, O.P.M.), the former submitting figures concerning relative quantity requirements. The artists were assured that no drastic curtailment appeared necessary, in view of these requirements.

Early in the year, New York City museums considered the protection of their treasures in event of bombing raids. At a meeting in February, plans were made on the basis of London experience. During the summer the Metropolitan Museum constructed a deep shelter below street level for paintings and sculpture, as did also the Frick Collection. The Brooklyn Museum studied three emergency plans. In Washington, D.C. the National Gallery of Art and Corcoran Gallery later in the year took similar precautions.

HEARST, MACKAY AND OTHER ART SALES

An innovation in the sale of art which was undertaken in 1940-1941 proved so successful that it may revolutionize the business. It will be recalled from earlier reviews in *THE AMERICAN YEAR BOOK* that the fabulous collection of William Randolph Hearst was placed on the market at the end of 1938: a collection of more than 15,000 items in 504 categories, ranging from miniature paintings to entire buildings, the most extensive and most valuable ever assembled by one man, who spent half a century in bringing it together, and valued it at more than \$50,000,000. It was divided between his homes in California and Wales and numerous warehouses. Dispersal began at Parke-Bernet Galleries in 1938, other lots later went to London auction houses, and selected groups were

offered at dealers' galleries; in 1940, groups were shown at department stores in Chicago, St. Louis, and Seattle, attracting much attention. Finally, the end of 1940, extensive lots were placed on sale in New York City at Gimbel's and Saks Fifth Avenue department stores, in charge of Dr. Armand Hammer, a deal said to be the most spectacular in art or department store history. The sale gathered momentum during the early months of 1941, the turnover surpassed all expectations, and was soon running at a rate which would total between \$5,000,000 and \$6,000,000 a year. Many important museums in the east joined the public in purchasing Hearst items.

Gimbels decided to remain in the art sale business and became agent for the Clarence H. Mackay collection, as well as items from six English collections sent over by the British Government to raise dollar balances. Other collections followed during the summer, one comprising 500 original Turners being disposed of in two days. It was not surprising that early in November, (1941) Gimbel Brothers inaugurated an auction department to supplement their regular art sales; an arrangement was made with the Kende Galleries in this connection. There was considerable speculation as to what effect this spectacular success would have on the long-established art dealers' galleries; the department store has many advantages, such as plainly marked price-tags, lower commissions because of large turnover, easy credit and installment selling.

GALLERY SALES AND PRICES

The Parke-Bernet Galleries' resumé of the art auction season 1940-41 showed an upward trend in art prices despite the war. The Galleries' gross sales amounted to \$3,606,381.75, an increase of 54% over the previous year; and audiences totalled 140,000 persons. One session of paintings and other art property of J. Horace Harding fetched a total of \$183,152.50, including the season's highest price at that Gallery, \$34,000 paid for Goya's

THE NATIONAL GALLERY OF ART

portrait of Victor Guye. Other high prices for paintings were Hobbema's "Wooded Landscape with Watermill," \$13,500; Boucher's "Le Moulin et Le Cours d'Eau," \$16,500; Fragonard's "Blind Man's Buff," \$12,500; Matisse's "Nature Morte," \$10,400; Reynolds' "Mrs. Freeman," \$15,500; del Sarto's "Holy Family with Sts. John and Elizabeth," \$12,000; a William Blake watercolor, \$10,100; and an unbearded portrait of Abraham Lincoln by Robert Hicks fetched \$11,000 in the Shipman sale, the highest price ever

paid for a Lincoln portrait. It had been done from life in the 1860 election campaign.

The Plaza Art Galleries, New York City, completed the 25th year with the 1940-41 season, which was exceptionally successful. The firm realized a total of \$1,178,789 for 61 sales of 32,500 lots, with prices 20% higher than the previous season. At the Michaelson sale in their galleries, Edward Savage's portrait of George Washington, done from life about 1790, fetched \$12,000.

THE NATIONAL GALLERY OF ART

BY FLORENCE S. BERRYMAN

THE AMERICAN FEDERATION OF ARTS

DEDICATION

Dedication of The National Gallery of Art in Washington on the evening of March 17, 1941 and its opening the next day, made available to the people of the United States the greatest single cultural gift to the nation throughout its existence. No other national gallery, in fact, has begun with so rich an endowment. The President, in his stirring address accepting the Gallery, said in part: "To accept this work today is to assert the purpose of the people of America that the freedom of the human spirit and human mind which has produced the world's great art and all its science—shall not be utterly destroyed."

THE MELLON GIFT

This culmination had its concrete beginning during the last few days of 1936, when the late Andrew W. Mellon, Secretary of the Treasury under three Presidents (1921-1932) and Ambassador to Great Britain (1932-33), offered his collection of works of art, a building to house them, and an endowment fund for partial support and possible future acquisition, as a gift to the people of the United States, to be a nucleus for a national gallery of art, which would some day equal the great galleries of Europe. President Roosevelt at that time accepted what he

characterized as the "very wonderful offer" (pending Congressional action) and made public on Jan. 3, 1937, the correspondence concerning it. (Actually, the first public announcement of Mr. Mellon's long-cherished plan to give his collection to the nation, was that of his attorney during the trial of his appeal from an extra income tax assessment, in 1935.)

OFFICIAL ACCEPTANCE AND CONSTRUCTION

By Act of Congress March 24, 1937, the National Gallery of Art was accepted, established as a bureau of the Smithsonian Institution under direction of a Board known as the Trustees of the National Gallery of Art, with upkeep, partial administration, and all operating expenses to be borne by the Government. Ground was broken in June, 1937, and construction begun before Mr. Mellon's death, Aug. 26, 1937, only a day before the death of the architect, John Russell Pope, whose associates, Otto R. Eggers and Daniel P. Higgins of New York, carried out his plans to the completion of the building in December, 1940. It was erected at a cost of approximately \$15,000,000, from funds given by Mr. Mellon, under the direction of Paul Mellon, Donald D. Shepard, and David K. E. Bruce,

trustees of the A. W. Mellon Educational and Charitable Trust. The Gallery is located on a site the donor selected, in Washington, D.C., on the north side of the Mall, bounded by 4th and 7th streets and Constitution Avenue.

The Gallery has been a great popular success from its opening. During its first month, it was visited by 301,342 persons (counting the opening night preview).

THE BUILDING

The building has exterior walls of rose-white Tennessee marble; its length of 785 feet makes it one of the largest marble structures in the world. More than 500,000 square feet of floor space are provided, of which about 238,000 square feet are for exhibition purposes, in nearly 100 galleries, admirably arranged and illuminated. The building is neo-classic in style, its central architectural feature, a dome inspired by that of the Roman Pantheon. The Gallery's dome is supported by 24 great verde columns of Italian marble; the rotunda beneath it is 100 feet in height and diameter; in its center is a large marble fountain surmounted by Giovanni da Bologna's bronze "Mercury." Vaulted, nave-like corridors, each 100 x 35 feet, for the display of sculpture, extend east and west from the rotunda to the wings, in each of which is a garden court; each court has a colonnade of 16 monoliths of Indiana limestone and a fountain surrounded by plants and flowers.

The building's most imposing entrance is that facing the Mall, from which 40 granite steps lead up to a portico of 12 Ionic columns, recalling that of the Temple of Artemis. The exhibition gallery walls have been treated to harmonize with their respective works of art. Early Italian paintings are hung against plaster with a travertine trim, reminiscent of quattrocento architecture, while later Italian paintings are displayed against brocade. Rooms for Flemish, Dutch, and German paintings are oak-panelled, those for French, Spanish, and British have tinted panelled walls.

THE MELLON COLLECTION

The collection of works of art, included in Mr. Mellon's original gift, comprised 126 paintings and 26 pieces of sculpture, representing most of the greatest masters from the 13th to the 19th centuries—from the Florentine Cimabue (1240-1302) and a Byzantine forerunner about 1200, to Goya and J. M. W. Turner. Among these are 15 paintings from the Hermitage Collection in Leningrad, founded by Catherine, the Great, which Mr. Mellon purchased in 1930 from the U.S.S.R. for the sum of \$6,654,000. They include five of its greatest treasures which accounted for nearly half the total cost. At the time the gift was offered (1936-37) it was conservatively valued at about \$19,000,000. During the tax assessment trial in 1935, however, statements by two experts, Dr. William R. Valentiner, and the late Lord Duveen of Millbank, indicated that this valuation was far too low. Lord Duveen, indeed, said an estimate of \$50,000,000 would be more accurate.

That his gift should not bear his name, was one of Mr. Mellon's original specifications. By emphasizing the national character of the gallery, he expressed the hope that other collectors would contribute works of art of similar high quality. As a matter of fact, no work may be included in the Gallery's permanent collection unless it meets this standard.

THE KRESS COLLECTION

The first great gift to follow Mr. Mellon's was that of Samuel H. Kress of New York, chain store magnate, who in July, 1939, presented to the nation his collection of 375 paintings and 18 sculptures, exclusively of the Italian School, and including works by nearly all important painters from the 13th to the 18th centuries. This collection was termed the greatest private holding of Italian art in the world, and was valued at about \$25,000,000. Before the National Gallery's opening, Mr. Kress lent an additional group of 43 paintings and 21 sculptures.

THE NATIONAL GALLERY OF ART

THE BULLARD GIFT

A second gift was made to the National Gallery on March 15, 1941, from which a selection was exhibited on the opening night: more than 300 important prints from Miss Ellen T. Bullard and three anonymous donors.

ITALIAN PAINTINGS

Both the Mellon and Kress collections have large numbers of outstanding masterpieces judged from the standpoints of esthetic quality or popular fame or both. Italian Renaissance works are vastly preponderant, since in addition to Mr. Kress's entire gift, 60 of the Mellon works belong to that School, approximately five-sixths of the Gallery's painting and sculpture collections. Outside of Italy, only Great Britain's national gallery equals the United States' new gallery in presenting so complete a history of the Italian School's development. Da Vinci and Michelangelo are practically the only outstanding omissions in the Mellon and Kress Italian paintings; works by them are unobtainable at any price.

The number of important works in the Italian Renaissance section is so great that any selection for mention must be regarded as incomplete. At any rate, among the treasures of this School are: Cimabue's "Christ between Saints Peter and James Major"; Giotto's "Madonna and Child"; Duccio's "Calling of the Apostles Peter and Andrew"; Fra Angelico's "Madonna of Humility"; two works by Masaccio, which were the last still in a private collection; Fra Filippo Lippi's "Madonna and Child" and "Annunciation"; Sassetta's "Meeting of St. Anthony and St. Paul"; Antonello da Messina's "Madonna and Child"; Pollaiuolo's strong "Portrait of a Man"; Botticelli's "Adoration of the Magi" (from the Hermitage, purchased for \$838,350) and his portrait of a youth; Andrea Mantegna's "St. Jerome in the Wilderness"; Perugino's "Crucifixion with the Virgin, Sts. John, Jerome and Mary Magdalen" (Hermitage); Raphael's "Alba Madonna" and "St. George and the Dragon," both purchased from the

Hermitage Collection (for \$1,166,400 and \$745,000 respectively); his Niccolini-Cowper Madonna, acquired in England (for \$800,000), and his portrait of Bindo Altoviti from Munich's Alte Pinakothek (loan); Giovanni Bellini's "Young Man in Red" (and 10 other works); Bartolommeo Veneto's "Portrait of a Gentleman"; Giorgione's "Adoration of the Shepherds"; Bernardino Luini's "Venus"; Titian's "Venus with a Mirror" (Hermitage, \$544,320) also his "Allegory" (portraits of Alfonso d'Este and Laura Dianti?); Giovanni Tiepolo's "Timoclea and the Thracian Commander," and Panini's "Interior of the Pantheon," of particular interest in the National Gallery.

ITALIAN SCULPTURE

Italian Renaissance sculpture, although numerically a small group, is exceptionally rich in quality. Works from the Mellon collection and some from the Kress include most of the items formerly in the famous Dreyfuss collection in Paris, which was the best of its type outside of Florence, having been assembled during more than a century. Masterpieces include the only important work in America by Agostino di Duccio, a "Madonna and Child"; Desiderio da Settignano's busts of a lady (Isotta da Rimini?) and a little boy; three works by Donatello, Madonna and Child, and two very different busts of St. John the Baptist; Mino da Fiesole's figures of "Charity" and "Faith"; a number of works by the della Robbia, Luca, Andrea, and Giovanni; Antonio Rossellino's bust of St. John, and his Madonna and Child; Verrocchio's virile portrait of Giuliano de' Medici, a Putto poised on a globe, and the "Adoration of the Shepherds"; and Pollaiuolo's "Bust of a Warrior," not to mention all.

MASTERS OF NORTHERN EUROPE

The Northern European Schools, with a much smaller representation numerically, nevertheless are the source of paintings which, because of their superb quality, offset the nu-

merous galleries of minor Italian masters whose works are of more interest to students than to the general public. The 17 Flemish and German paintings include Jan van Eyck's "Annunciation" (Hermitage, \$503,010); Rogier van der Weyden's "Portrait of a Lady"; Memling's "Man with an Arrow" and "Madonna and Child with Angels"; Petrus Christus' "Nativity"; Gerard David's lovely "Rest on the Flight into Egypt"; Master Michiel's "Knight of Calatrava"; Holbein's "Sir Brian Tuke" and "Edward VI as Prince of Wales"; Rubens' glowing portrait of his first wife, Isabella Brant; and five portraits by van Dyck, among them the splendid Marchesa Balbi and the famous "William II of Nassau and Orange" (Hermitage). Rembrandt accounts for nearly one-third of the 28 paintings of the Dutch School, among his nine portraits and figure paintings being an outstanding one of himself (purchased from the collection of the Duke of Buccleuch, Scotland, \$575,000); a "Polish Nobleman" and four others from the Hermitage, and "Lucretia." There are Hals' "Elderly Lady" and five other portraits; three landscapes by Hobbema; and Aelbert Cuyp, de Hooch, Maes, Metsu, Mor, and Ter Borch are also represented. Finally, there are Vermeer's gem-like "Girl with a Red Hat" and two others (acquired for a total of more than \$1,000,000).

BRITISH AND SPANISH SCHOOLS

The British Schools' 20 examples, representing all the great 18th century masters save Hogarth, include such famous works as Reynolds' "Lady Elizabeth Compton," full length and famous from many reproductions, "Lady Caroline Howard" and "Lady Elizabeth Delmé and Her Children"; Gainsborough's portraits of Mrs. Sheridan and of Georgiana, Duchess of Devonshire, and four other works, one a landscape; three portraits each by Raeburn and Romney, the latter's best, "Mrs. Davenport"; Hoppner's "The Frankland Sisters"; Lawrence's "Lady Templeton and Her Son"; and three landscapes, a

"View of Salisbury Cathedral" by Constable, and two by Turner, one painted in his middle age, the other about 18 years later, and very unlike.

The Spanish, French, and American Schools were represented in the most fragmentary manner when the National Gallery opened. Two paintings by El Greco (that of Saint Ildefonso having once been owned by Millet, later by Degas), three portraits by Velazquez, including "Pope Innocent X" and four portraits by Goya, among them the charming "Marquesa de Pontejos," carried the weight of the Spanish School. Another Goya, "Don Bartolomé Sureda," a fellow artist, was the most recent gift to the National Gallery (November), presented by Mr. and Mrs. P. H. B. Frelinghuysen of Morristown, N. J., in memory of her parents, Mr. and Mrs. H. O. Havemeyer.

THE AMERICAN SCHOOL

The American School, on the opening night, was represented by 11 18th and early 19th century portraits of high quality: five by Gilbert Stuart, among them in his so-called Vaughan portrait of Washington (from life) and his penetrating "Mrs. Richard Yates," and appealing young "John Randolph of Roanoke," who is seen in old age in Chester Harding's straightforward revelation. Benjamin West's "Col. Guy Johnson" shown with his Indian secretary, Trumbull's famous "Alexander Hamilton," Edward Savage's well-known portrait of the Washington Family, Copley's "Earl Howe" and Mather Brown's "William Vans Murray" were a credit to the American School. It was much strengthened, however, by the opening in August, of two additional galleries displaying works by Stuart, Thomas Sully, Samuel Waldo, and others, which are not only excellent examples of American artists' works, but also constitute an historic panorama. Except for a portrait of Andrew Jackson by Waldo, purchased by Mr. Mellon, the collection is an indefinite loan to the Mellon Educational and Charitable Trust by Thomas B. Clarke.

SCULPTURE

Paintings will be changed from time to time, but the two galleries on the ground floor will continue to show American works.

THE FRENCH SCHOOL

The French School, at the Gallery's opening, was to be seen only in two paintings by Chardin and one by Lancret, "La Camargo Dancing," (originally acquired by Frederick, the Great, and subsequently owned by William II of Germany) and in two monumental urns by Clodion and one group each by Legros and Tubi, surmounting fountains in the two garden courts, and a few loans. This situation was remedied to some extent, beginning in June, when a loan from Mr. and Mrs. Chester Dale of New York City, was announced, comprising 25 paintings of the 19th century French School. In September, Duncan Phillips, director of the Phillips Memorial Gallery, Washington, D.C., presented Daumier's "Advice to a Young Artist," a painting once owned by Corot, and the first 19th century French painting to enter the National Gallery's permanent collection. Shortly afterward, seven important paintings from the Harris Whittemore Collection were lent to the Gallery for an indefinite period, further strengthening the French School's representation, as they include two works each by Renoir and Degas; the remaining three are by Whistler.

All these additions were open to the public Nov. 15, 1941, preceded by a preview on the evening of Nov. 14, with a large attendance from official, artistic, and social circles, similar to

that at the Gallery's opening. The Chester Dale loans illustrate the general development of French painting from David to Cézanne. Features are David's Neo-Classic portrait of Mme. Hamelin, Delacroix' romantic "Columbus and His Son at La Rábida," Corot's large "Forest of Fontainebleau" (which he considered among his best works), and "Agostina," one of his outstanding figure paintings, Manet's realistic "Old Musician" and two works by his fellow-realist Courbet; a large group by the Impressionists represented by Degas, Renoir, Berthe Morisot and Pissarro. Five paintings by Degas include his "Four Dancers" and several portraits; there is an equal number by Renoir, among them his "Diana," and charming little "Girl with a Watering Can." A "Still Life" by Cézanne, works by Daubigny, Fantin-Latour, Monticelli, and Puvis de Chavannes complete the group.

THE WIDENER COLLECTION

The second great American collection announced since Mr. Mellon's death, as destined for the National Gallery, is that belonging to P. A. B. Widener, 2nd, of Philadelphia. The owner's intentions were made public in October, 1940, but no date was specified. A description of this magnificent collection of more than 100 paintings, as well as Renaissance sculpture and decorative arts, housed at Lynnewood Hall, Elkins Park, Philadelphia, was given in *THE AMERICAN YEAR BOOK* for 1940. The non-appearance of the Widener Collection at the Gallery's opening inspired some conjecture. (See "Painting," page 922).

SCULPTURE

BY ROSE V. S. BERRY
ART CRITIC AND WRITER

INFLUENCES—PAST AND CURRENT

A mere succession of twelve months is not sufficient time in which to gauge a development. In prospect,

or promise, it may record a birth; in retrospect, it may announce the end. The year 1941 appeared to be bringing to a close a long period in the history of American art during

which more was done to encourage the American sculptor than ever before.

The influence of several schools established itself; too it was readily discovered in the work of younger students and budding professionals. The observer saw on every hand the large, rounded surfaces to which William Zorach adds dignity of theme, ignoring minor detail. Robert Laurent leads a group interested in poses that make their own problem in mediums that embrace difficulties concurrent with the theme and the essential craftsmanship to express it. Alexander Archipenko, with his constant experimentation in medium, color, and form verging upon abstraction; the late Gaston Lachaise, with his softened, elongated, bulky female figures; Eli Nadelman, with his Grecian calm and remoteness; Maurice Sterne, with his Pre-Phidian size and excellent modeling, with that dawn-ing mentality that holds the figure in a dawn-of-reason, are among the Americans whose followers have not excelled the masters of the style.

Rodin, with his painter qualities of light and shade and his search for new subject matter; Maillol, with his excellent modeling and classic abhorrence of the extreme; Bourdelle, with his strange merging of the modern theme and the ecclesiastic subject; Ivan Mestrovic, with his amazing stylization and religious moods; Carl Milles, with a Scandinavian spirit unlike that of the others, but not lacking in their standards, have all influenced the thought of the American student-sculptor in some degree. Georg Kolbe, Wilhelm von Lehmbruck, Ernst Berlach, and Rudolph Belling, the German sculptors, have been influential in theory and more or less by absent treatment.

LICENSE IN THEME

Analysis of the foregoing will make clear how thoroughly the modern output of sculpture has been studied by the modern sculptor. Height and angularity, attenuation to the fineness of a thread if it could be made to stand; bulk that was a shapeless

mass; light and shade to the point of only grooves and ridges; smoothed, glistening, rounded surfaces until the egg had no more to offer, have each in turn, or all together, occupied the American sculptor. Ugliness has been practiced to extent of the repulsive; medium to the extreme of coal, brick, and iron. Classicism has been scorned. The academic has become taboo. Independence and refusal to conform are privileges claimed by those who, too often, are least able to use them to advantage; theme by these sculptors is liberated to the "wind's will."

DISPLACEMENT OF STANDARDS

The accident of medium and the irresponsibility of savagery have taken the place of standards. At times it has seemed that nothing was so nearly unacceptable as real craftsmanship and regard for the limitations or the possibilities of a sculptor's art. All this was aided and abetted when politics—not the science of government but as the essence of revolution—began to disrupt the art groups. Such an occurrence in the course of human events, however, may be the source of a great art. It has served, more than once, as an inspiration when a nation has gone to its doom, a civilization has perished, or a new religion has been established. And when a piece of sculpture comes from the hand of an artist whose way of Life and Living has become a sacred thing, an ideal for which men will bleed and die, his art will be above the mediocrity of a problem, or the experiment of the hour. "It is not to the artist of such a statement that one should say the subject is immaterial; that is for the philosopher to say to the philistine who dislikes a work of art for no other reason than that he dislikes it." (Coomaraswamy). Regardless of time, race, and all differences, the sculpture that has clung worthily to an idea has survived. When the occasion asks it, the sculptor should be willing to submit to such a test; 1941 called forth many important exhibitions, competitions, and one-man-shows, through

which the American public should at least begin to know its sculptors.

ONE-MAN SHOWS

Carl Milles' exhibition of 33 pieces was the most comprehensive show he has made since his American residence. Most of the sculpture was work done in this ten-year period and included a large fountain intended for a zoological garden. A massive Indian Head in Mexican onyx was outstanding. Orpheus' Head of his Swedish Fountain, which won him the over-all sculpture prize in the Golden Gate Exposition in San Francisco in 1939, has been recently installed in the Metropolitan Museum, New York. The Milles' exhibit is booked for several cities.

Alfeo Faggi, whose 14th century spirit qualifies all that he does, exhibited a large number of bronzes and marbles. If this sculptor had never accomplished anything beyond his portrait head of Noguchi, the Japanese poet, recently purchased by the Metropolitan Museum, and his Madonna in the Santa Fe Museum in New Mexico, he would have attained a permanent place among the American sculptors. This exhibition was booked for a museum circuit.

Robert Laurent's one-man-show, consisting of 22 pieces, revealed the fact that this artist only grows more certain of himself in the passing years. His work intrigues by pose and movement; it thrills the observer by the artist's handling of masses and the variety of mediums, a challenge that Laurent never overlooks.

Challis Walker's exhibition is composed of three pieces of sculpture in each of three mediums. Such a test must afford ample material for a comprehensive estimate of his ability, and a revelation of the medium in which he reaches his artistic best.

Anna Hyatt Huntington, who is too seldom seen in recent years, held a large exhibition in Trenton, N. J. Joseph Pijoan, the noted Spanish critic and art historian, asserts that Mrs. Huntington, as an *animalier*, is unexcelled among modern sculptors. She has experimented most success-

fully with new and interesting mediums, but her chief accomplishment lies in droll and often humorous characterization, and her animal combats are second to none.

Heinze Warneke did in 1941 what he has often done before, exhibited a large collection of small figures. Few sculptors are more thorough masters of the contents of a block of hard wood, a chunk of granite, a lump of volcanic glass, or Belgian marble. Apparently, Warneke stops at nothing. His small sculptures were done in steel, iron, terra cotta, brass, brick, coal, and all kinds of tropical and South American hard woods. His sculptures, though often small, are monumental in scope and feeling, and would enlarge to great advantage, though they are little masterpieces as they are.

José de Creeft staged one of the most exciting exhibitions of his career. His compositions ran an extraordinary gamut, from a Cherubic Embrace to the majestic portrait head of Ibtsenca. He opposed the massive visage of Recueillement to the amusing fat Old Friends, a Buddha-like-musician embracing his cello so closely that they are almost one in sculpturesque volume. For some observers, de Creeft's honors would lie between a Hebraic Medusa-Head and Les Adieux.

Other Exhibitors were: Malvina Hoffman, at Saint Paul, Minn.; Bashka Paeff, Boston; William Zorach, Rochester, N. Y.; Hans Reiss, Montclair, N. J.; Nat Werner, New York; Ulric Ellerhusen, Ashbury Park, N. J.; Concetta Scaravaglione, Richmond, Va.; Alexander Calder, exhibiting his mobiles and stables, in a museum circuit; Enid Yandell, Louisville, Ky.; Carroll Barnes and Carolyn Lloyd, in Los Angeles; and William Steig, Kalamazoo, Mich.

ANNUAL EXHIBITIONS

Pennsylvania Academy of Fine Arts, through its Sculpture Jurors, Edward McCartan, Mahonri Young, and Charles Rudy, awarded only one prize, the Widener Memorial Medal given to Dorothea Greenbaum for

her bronze called "Tiny." Other outstanding work included a fountain figure by George Demetrios, a group by Jeno Juszko, "Faun" by Bruce Moore, large nude by Harry Rosin. "Knock Down" by Mahonri Young. "Stray Cat" by Abestena St. Eberle. and head of President Roosevelt by Jo Davidson.

National Academy of Design's spring exhibition awarded the Speyer Memorial prize to Ralph Menconi. for "Nocha," a stodgy little lamb. The Procter Prize was given to Robert C. Koepnick, for his portrait "My Mother."

Whitney Museum, separating sculpture from painting, put on an imposing exhibition, one that did full justice to the less colorful but more dramatic art. Among the exhibitors were Jo Davidson, José de Creeft, Nat Werner, Warren Wheelock, William Zorach, Chaim Gross, Heinze Warneke, Concetta Scaravaglione, John Hovannes, Henry Kreis, Marion Walton, Simon Moselsio, Antonio Salemme, Lo Medico, Louis Slobodkin, Lawrence Tompkins, Arthur Lee, Robert Laurent, Gertrude V. Whitney, Herbert Ferber, Hugo Robus. Saul Baizerman, Alexander Archipenko, Minna Harkavy, Rozak, and Burroughs.

Independent Society held its Jubilee Exhibition, in celebration of its 25th year, with its veteran president, John Sloan, still enthusiastically loyal to the artist who needs what the Independent Society can give him. The critics willingly admitted that sculpture, in the free-for-all venture, retained a higher professional standard than its rival arts. Among the examples receiving praise were "Cormorants" by Jane Wasey, "Young Pugilist" by Sally Ryan, "Phenomenon" by George H. Snowden, "Epic of Human Life" by W. J. Sewell, "Women" by Barbara Kaufman, "Walt Whitman" by Warren Wheelock, and "Rivals" by Oronzio Maldarelli.

Chicago Art Annual awarded its Logan Prize to Oronzio Maldarelli's limestone head, titled Barbara.

Hoosier Artists, at the John Her-

ron Art Museum in Indianapolis, awarded their sculpture prize to Robert Lohman.

Albany, New York, at its Sixth Annual Exhibition of the Upper Hudson artists exhibiting from Vermont, Massachusetts, Connecticut, and a 100-mile radius in New York State, counted among its sculptor exhibitors Margaret French Cresson, Dorothy Lathrop, David Smith, Simon Moselsio, and Douglass Crockwell.

Boston's Independent 14th Annual awarded its first prize to Robert Scott; second prize to Margaret D. P. Nelson; third prize to Ann Wolfe; and Honorable Mention to Charles Cutter.

Annual Soap Exhibition has become one of the important shows because of the talent it discovers. Its beautiful but inexpensive medium enables many hundreds to compete, so many in fact, that they have to be divided into three sections: Artists, Professional, and Amateur. Another phase of the importance of the show is revealed in its Jury, which in 1941 consisted of Alexander Archipenko, George E. Ball, Alon Bement, Harvey W. Corbett, Ernest B. Haswell, Ely J. Kahn, Robert Laurent, Leo Lentelli, Walter Pach, Tony Sarg, and William Zorach. From such judges it is indeed an honor to receive an award. The first group prizes went in order of sequence to Edward Anthony, Watson Haskell, Mrs. Yetta Goldstein. Second group prizes went to Vincent de Palma, Frank Garibaldi, Abraham Goldstein. Third group prizes went to Herbert Peuchner and Bernard Hoffman. In each group there were many Honorable Mentions. These and all prize winners were selected for the circuit exhibition which travels to colleges, high schools, and libraries throughout the United States.

National Association of Women Painters and Sculptors awarded the first Anna Hyatt Huntington prize to Frances Mallory Morgan for her heroic "Nude Figure" (in aluminum). The second Anna Hyatt Huntington Prize went to Leona Curtis for her Woman Standing. Third prize went

to Sybil Kennedy for a Seated Figure.

All-Texas First Annual was sponsored by the citizens of Arlington, Tex. Among the sculptors exhibiting were Delmar Pacht, Ramond H. Williams, Carl B. Compton, Evaline Sellers, Octavio Medellin, Edmond Kingzinger, and Margaret Glasscock.

Los Angeles Fair devoted its exhibition to American sculpture. Both the Jury of Selection and the Jury of Awards were able men. Archibald Garner, Charles Lawler, George Stanley, and George Stewart accepted 63 pieces of sculpture for the exhibition. Roland McKinney, Donald Hord, and Ralph Stackpole gave purchase prizes in order of their sequence: First, to Will McVey's carved "Siesta;" Second, to Albert Stewart's "Mountain Goat;" Third, to Carroll Barnes' "Polar Bears," carved in lucite; Fourth, to Betty Davenport's "Bear and Cub."

Modern Painters and Sculptors, many if not most of whom were dissidents from the Artist's Congress in the 1940 schism which involved the Spanish Loyalists, Stalin, Nazism, Fascism, Communism, and isms less important, but vocally violent, exhibited in Riverside's Museum Galleries. Work which attracted high praise included: "Strip Tease" by Arline Wingate; examples ranging from simple realism to delightful abstractions by Warren Wheelock; de Creeft's sterling craftsmanship; decorative semi-abstracts by Rhys Caparn; portrait heads by Anita Weschler, and other work contributed by several able men, among them Herbert Ferber, T. Trajan, and Franc Epping.

SCULPTORS' GUILD OUTDOOR EXHIBITION

This exhibit contained the work of 65 sculptors and outdid anything they have so far accomplished in their effort to arouse interest in the living American sculptor. Exhibits varied from welded steel to wood, from clay to stone, from plaster and plastic whimsicalities to subjects of monumental character. The best examples in direct carving placed emphasis

upon sinew and action made notable in simplified planes. In theme the story-telling examples were notable. Among the prominent exhibits were: Milton Hebard's "Homage to Whiteman;" Nat Werner's "Red Dancers" of 1934; Chaim Gross' "Athletes;" Alonzo Hauser's gilded "Gypsy Rose Lee;" Anita Weschler's "Nude Athlete" with the Rockwell pose; John Hovannes' two pieces, "Stevedore" and "Monday Afternoon;" Oronzio Malderelli's portrait of the artist Frank Mehan; Robert Cronbach's typical pieces "Crippled Sailor" and "Committee Meeting;" Richmond Barthé's "Great Emancipator;" Richard Davis' biblically inspired "Flight;" Lee Duble's "Bride of Mayapan;" Nathaniel Haz's "African Drummer;" Paul Manship's "American Black Bears;" Ward Montague's "Prophet;" Charles Rudy's (stone) "Mother and Child;" Hugo Robus' "Invocation;" Marion Walton's "Country School;" Polygnotos Vagis' two French marble compositions; Vladimir Yoffe's portrait of Heywood Broun, and Warren Wheelock's poised "Skater." Louis Slobodkin's "Indian Rider" brought the native American into the show. The collection, almost entire, was exhibited in Cleveland, and later in Chicago, after which in smaller groups it made a museum circuit.

COMMISSIONS

Ellen Phillips Samuel Memorial Committee put on an international competition to find sculptors to do the Second Unit of the project which is now ready. Sculptures to the number of 412 pieces were in the contest, which resulted in the appointment of Harry Rosin, Henry Kreis, Erwin E. Frey, and Wheeler William to do the work.

Paul Manship was commissioned to do the Aero Memorial to be placed in Fairmont Park, Philadelphia, commemorating Pennsylvania's aviators who died in the first World War.

Thomas Jefferson portrait statue, to be installed in the Jefferson Memorial, Washington, D. C., occupied the interest of many. Six sculptors

were named to compete for the commission. The first submissions were deemed inadequate, but three of the sculptors were chosen to try again; of the finalists, Rudolph Evans of New York won the appointment.

War Department Building, for which the sculpture Jurors are Carl Milles, Edgar Miller, and William Zorach, had the sculpture to flank its 23rd Street entrance awarded to Earl N. Thorp of Danbury, Conn., who won over Salvatore Ferrugia, and to Leo Steppat.

Sahl Swarz, director of the Clay Club, now serving with the Army, submitted two figures in the Fine Arts competition for the sculptural decoration for the Court House in Statesville, N. C. His work won a \$5,200 commission for him.

PLACEMENTS

José de Creeft's two compositions, "Group of Women" and "Fauna," were purchased for the permanent collection of the Norton Gallery, West Palm Beach, Fla. The French limestone figure "Mediterranean Girl" by de Creeft was purchased by the Art Museum of Wichita, Kan.

John B. Flannigan's superb portrait bust of Augustus Saint-Gaudens was presented to the Metropolitan Museum several years ago; in 1941 the Museum purchased his "Figure of Dignity."

Edmond Amateis and **Donald De Lue** were recommended by Paul Manship, Adolph Weinman, and Lee Lawrie for the commission entailing eight recently installed granite reliefs for Philadelphia's new Court House. De Lue's two panels, 11' wide by 9' high, represent Law and Justice and are on the Market and Chestnut Street sides. The four Amateis panels are 11' wide by 9' high and are devoted to the delivery of mail in the New World—North: Eskimo, dog-team and sled; South: nude-chested native surrounded by tropical vegetation; West: cactus framed cow-boy; East: traditionally gray-clad mail man.

Pietro Montana's plaque 7' high and topped by a ram in semi-relief,

was installed and presented by the class of 1941 to Fordham University as part of the University's centennial celebration.

Robert Laurent's "Black Belgian Marble Head" was recently purchased for the permanent collection of the University of Nebraska.

Raymond Puccinelli's (WPA), black granite "Panther" was placed in the Junior College of Salinas, California.

TRAVELING SCHOLARSHIPS AND PRIX DE ROME AWARD

The Guggenheim sculpture awards were given by James E. Fraser and Mahonri Young, the Jurors, to Richmond Barthé, a young Negro sculptor, who receives the honor for the second time, and Marion Sanford, Canadian born, but now a resident of New York City. The Prix de Rome in 1941 was awarded to William Talbot despite the war. All traveling scholarships were awarded with the understanding that they are to be used in the Western World. This is true of the Cresson, the Abbey, and the Guggenheim Scholarships, as well as the Prix de Rome.

THE WAR AND TWO AMERICAN SCULPTORS

Jacob Epstein, still an American citizen but with a long residence in London, recently finished a bronze portrait head of his grand-daughter. While it was being admired as one of his best children's portrait, he gave it to the Bristol War Fund, to bring what its charm could coax for the War Orphans of Bristol, the English port that has suffered so terribly from bombing.

Jo Davidson donated the purchase price of his bronze portrait-bust of Dolores Ibarruri, titled the "Woman of Madrid," a heroine of Loyalist Spain, who might well immortalize the exhortation of Pasionaria, when he said: "Better to die on your feet than live on your knees." Davidson's gift was to the Modern Museum of Art in New York, the proceeds to swell the fund for refugee artists.

ARCHITECTURE

DALLIN WAR MEMORIAL

In the studio of Cyrus Dallin, there is a war memorial that should be given to the world within the next few months of 1942. It did not come after the World War, because Dallin considered it too terrible to tell. Compared with this type of warfare—no battle line, no security even for the aged, the lame, and sick, nor women and children—the Dallin sculpture is merciful, because it is at least fair. The subject consists of two perfectly matched combatants. They are

clinched—in great detail—in what will be a death struggle for each of them. As the observer looks upon the physically ideal men, he sees the horror and the bitterness, the hopelessness and the futility of the battle. Dallin makes another observer suffer, too. In delicate relief, in sorrowing regret stands the Christ—the robed, humble figure of Galilee—and written in an unforgettable sentence are the words: "And these are my children."

ARCHITECTURE

By PHILIP C. JOHNSON

DEPARTMENT OF ARCHITECTURE, HARVARD UNIVERSITY

GENERAL

In the war year 1941, the art of architecture took on, as was inevitable, a more public character. By the close of the year it was obvious that private building for private purposes was nearly at an end. The period of skyscrapers, suburban residences, country clubs, and even churches, museums, and schools was temporarily over. The energy of architects throughout the country was absorbed more and more by public commissions.

OFFICIAL ARCHITECTURE IN WASHINGTON

Among the public works of the year there were some peacetime buildings still being built. The most anachronistic were the Mellon Gallery in Washington and the Jefferson Memorial in the same city. The minds of the country were on less monumental problems and on less classical and eclectic design. Both buildings looked old fashioned even before they were open to the public. Also in Washington stands the new National Airport which belongs, with its out-of-scale reminiscences of Mt. Vernon, also in the category of old fashioned new buildings.

ARCHITECTURE OF FEDERAL AGENCIES

Except for New York, municipal architecture during the year was meagre. The Federal Agencies did better. Most memorable will be the work of The Tennessee Valley Authority under the general architectural supervision of Roland Wank. Massive in scale and straightforward in detail, the dams, dynamo rooms and control houses of the Tennessee Valley are much more nearly symbolic of our times than the correct dullness of official Washington.

Perhaps even more important is the work of the San Francisco office of the Farm Security Administration. Besides making a dent in the migrant labor problem of the far west, young architect Vernon de Mars has made a dent in the central problem of architecture—town planning. The FSA camps at Chandler, Ariz.; Woodville, Calif.; and Granger, Wash., though they owe something in design to the great Swiss pioneer of contemporary architecture, Le Corbusier, are very clean, very neat, and very American.

NEW YORK CITY

New York City fared better than Washington. Park Commissioner

Robert Moses continued his road building, making art out of traffic lanes. Most of his parkways and bridges are good architecture; the East River Drive winding in and out and up and down, crossed by light concrete footways, is very good architecture. Even the New York Asphalt Plant which Commissioner Moses had to move away from the river front for his Drive is now a work of art. Its startling parabola is a welcome relief among New York's endless rows of walk ups.

PUBLIC HOUSING

Scope.—The big new step in architecture for 1941 was public housing. Never before in our country have we seen governmental planning and architectural creativeness combined in the building of whole communities. Heretofore, our housing developments have been built speculatively, crowdedly, hit-or-miss, and, more often than not, entirely without benefit of architect. In 1941 the combination of necessity and leadership put the United States far in advance of the whole housing world. The necessity was the dislocation caused by defense requirements. Workers were suddenly needed where none had been needed before. The leadership came from the Federal Works Agency, especially from Defense Housing Chief Clarke Foreman. The result is a whole series of planned communities. They are discouragingly inadequate to the problem, but they are a beginning.

New Kensington Project.—Architecturally the most important is the New Kensington, Pa. project designed by two Harvard professors, Walter Gropius and Marcel Breuer. Here a new pattern of city planning takes the place both of the dull gridiron system of the nineteenth century, and of the romantic scattered house type of the "suburban" period. The houses are connected in rows of four to eight units, and these rows are grouped, carefully following a steeply sloping site, in a free asymmetrical arrangement. The project will undoubtedly have a great influence on future housing.

Vallejo Project.—The largest project of the year was architect William Wurster's 1,600 units at Vallejo, Calif. Here, site prefabrication cut costs and proved the desirability of large-scale undertaking in the field of housing.

Stubbins, Howe, Wright.—Among the projects having free standing single houses, Hugh Stubbins of Cambridge did the most interesting work. The best organized office for handling big work was probably George Howe's in Philadelphia. The most distinguished name among housing architects of the year was that of America's foremost architect, Frank Lloyd Wright, whose project at Pittsfield, Mass. had not been completed at the end of the year.

Community Planning.—The year 1941 may be known in our architectural history as the year when community planning started in the United States—the year when the field of activity of the architect widened from the single building to congeries of buildings.

PREFABRICATION

With defense housing rose the demand for prefabricated houses; that is, the adaptation to housing of the mass production methods of such industries as the automotive. It was only partially answered in 1941. Engineer-architect Buckminster Fuller produced a house made by a corn-crib manufacturer. The Pierce Foundation for the Glenn Martin Plant near Baltimore built many houses using an insulating sandwich. The Pierce house is, however, not fully prefabricated. Others proposed plywood panel construction and, one man built an experimental house near Washington of "gunite" concrete sprayed onto a balloon held framework of reinforcing rods. The only attempt at erecting a test community of prefabricated houses was a government project at Indian Head, Maryland. It was not a success.

TRENDS IN DESIGN

General.—The trend in design during the year continued the direction of the past decade toward what used

to be called "modern." Holabird and Root of Chicago in their work for universities and railroads continued to be the most successful adapters of contemporary design to conservative uses and for conservative clients. The Saarinsens, father and son, continued their graceful style. William Lescaze finished his Longfellow Building in Washington where it marks a clean contrast to the vast official eclecticism. The major design problem, however, of the last years has been the private, free standing house, and it is in this field that the various trends are clearest.

The East.—In the East the influence of the Harvard Architectural School continued to grow. The best houses in this strongly European tradition are the ones by Gropius and Breuer; especially good is the Chamberlain house in Wayland, Mass.

Middle West.—In the Middle West the tradition of Frank Lloyd Wright once more assumed the proportions it had a generation ago. Wright, after a long and undeserved eclipse, is once more a leader. His manner and that of his followers is somewhat influenced by European work of the last generation. The roofs are flatter and the windows more often reach the floor, but their houses keep the "Prairie" look which they had in 1910.

West Coast.—It is on the West Coast, however, that domestic architecture has had its real boom. It is here only that a "School" may be said to exist. The "California School" work shows the influence of Wright, of the Austrian Neutra who works in Los Angeles, of European pioneers and even of the Orient, but it is nonetheless original. The houses are simpler than Wright's, more fitted to wood construction than any European models, more straightforward than any eclecticism. The careers of some of these young architects should be followed: John Funk, John E. Dinwiddie, Gardner Dailey, Gregory Ain, John Yeon.

PUBLICATIONS

The most important work on general architecture to appear during

1941 was *Space, Time and Architecture* by the eminent Swiss critic, Siegfried Giedion. It is an ambitious history of the background of modern architecture written as a morphology of history. Especially noteworthy: the story of the effect of engineering on aesthetics; the story of the effect of social patterns on architecture. In the field of American architecture, Henry Russell Hitchcock's monumental illustrated volume on Frank Lloyd Wright will long be the standard work on our greatest architect.

The prize for the magazine of the year goes without question to *California Arts and Architecture*, a lively and discriminating review. The larger architectural magazines were beset during the year both with falling advertising revenue and with increasing pressure to feature the expedient rather than the fine. The *Architectural Forum* carried the best reports on new developments.

EDUCATION

As in other professions, in recent years architects were faced with the problem of oversupply. As a result, fewer young men went into the field, attendance at schools declined, and just at the same moment income from endowment diminished. The entrance of America into the war only hastened the trend. New York University had to suspend its architectural school entirely.

The quality of instruction, however, remained high both in the official academies and the one-man studios. It was in the field of education that the United States has most profited architecturally from the European war. Expatriates returned and emigrés came to teach. Walter Gropius and Marcel Breuer of the Bauhaus teach at Harvard. Moholy-Nagy has started a new Bauhaus in Chicago. Miës van der Rhoe is the director of architecture at the Illinois Institute of Technology in Chicago. Alvar Aalto, Finland's most distinguished architect, taught in 1941 at Massachusetts Institute of Technology. Antonin Raymond, long an expatriate, has a studio at New Hope,

Penn. Erich Mendelsohn of Palestine and Serge Chermayeff of London are now active here. Paul Nelson returned from years in Paris. All these men stimulated and influenced the art of architecture during 1941.

THE POLITICAL ELEMENT

As 1941 closed, architects turned their attention perforce to the political scene. The great field of private construction seemed closed to them; on the other hand, government building was more and more kept in the

hands of government architects and engineers employed in the offices of the Public Buildings Administration or in the Army and Navy bureaus. Private practicing architects did not seem very important in the rush of building cantonments, defense plants, and emergency housing. If the architects were to be the leaders in the "space arranging" of the future and not merely allow the whole task to devolve upon engineers, military and civil, they had to face, as a profession, a semi-political struggle new in their experience.

MUSIC AND THE OPERA

By OSCAR THOMPSON
EDITOR, *Musical America*

MUSIC IN WARTIME

The closing weeks of 1940 found the United States at war, but with little effect upon the music of the country. Everywhere the national anthem was played by orchestras and other musical organizations at the beginning of concerts. But little was heard of any movement to debar the music of enemy countries from our concert halls or opera houses. In the last great war only German music—chiefly that by Wagner and his successors, including such living figures as Richard Strauss—was excluded. Italy then being an ally, as was France, the music of its composers was fostered in substitution for that of Germany. Aside from the opera, where banishment of the works of Wagner and Strauss was a severe loss to the repertory, song recitals suffered the most because of the pre-eminent place that long had been accorded the Lieder of Schubert, Schumann, Brahms, Wolf, and others. Without this backbone of German Lieder, vocalists were seriously handicapped in the formation of interesting and worthwhile programs. With Italy now an enemy, and France in an equivocal position, any attempt to rule out only the music of Germany might give rise to no end of questionings

and disputes, particularly since many musicians who were active at the time of the last war were then convinced—or have since become convinced—that the exclusion of German music at that time served no real war purpose.

To date, the Metropolitan Opera Association has gone on producing operas by Wagner and Strauss, together with those of the Italian repertory. To exclude all Italian operas, as well as the much smaller but very popular German repertory, would virtually mean to close the house, as there are only a handful of French works in the active list, plus a scattering of Russian, Czech, and other works, including the new season's American novelty, Gian-Carlo Menotti's "The Island God." Lieder continues to occupy singers of all nationalities in our recital auditoriums. The symphony orchestras are playing the symphonies, tone poems, overtures, and suites of the German masters, along with works by Italian, French, British, American, and other composers. Only in one rather humorous particular did the infamy of the attack on Pearl Harbor result in cancellations of musical events in reaction to the war. These cancellations, drolly enough, were of various performances of "The Mikado," the

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Gilbert and Sullivan operetta dealing with quite another and different Japan. Presumably there was no thought here of "make the punishment fit the crime."

Already mass singing and various choral, orchestral, and other musical activities among the soldiers in the camps and naval recruits at their bases, is being supplemented by the visits of outstanding professional artists and musical organizations, as in the last war, if not yet on so extensive a scale. This is part of the work of the morale divisions of the armed forces, and is being carried on with the assistance of various civilian committees and agencies, including the Camp Shows, Inc., of the United Service Organizations. This work was well under way in 1940, even before the declaration of war.

OPERA AT THE METROPOLITAN

Each calendar year embraces the latter part of one opera season and the beginning of another. The Metropolitan began 1941 on New Year's night with Verdi's "Aïda" and closed it on the succeeding New Year's eve with Donizetti's "La Fille du Regiment." The Verdi performance on Jan. 1, 1941 brought with it the first of the year's operatic debuts, that of Stella Roman, Rumanian soprano, who continued with the company in the new season of 1941-42. Of prime interest among additions to the repertory was the first Metropolitan performance of Gluck's historic "Alceste" with Marjorie Lawrence in the title role (later assumed by Rose Bampton). Ettore Panizza conducted. In the new season of 1941-42, "Alceste" has been replaced by the same composer's older and amply familiar "Orfeo." "Alceste" received in all a total of five performances.

Since these are the days of the ascendancy of the conductor in opera as well as in symphony, the Metropolitan debut of Bruno Walter, which took place Feb. 14, 1941, when he led the first of three performances of Beethoven's "Fidelio," was an occasion for unusual display of enthusiasm. Thereafter, on Feb. 28, he took

over Smetana's "Bartered Bride," sung in English; and on March 7, Mozart's "Don Giovanni." Both were publicized as revivals, although only briefly absent from the house. Italo Montemezzi's appearance in the pit on Feb. 7 for the first of three performances of his own "L'Amore dei Tre Re" was another of the quickening events of the 1940-41 season. Grace Moore sang the role of Fiora for the first time.

RETIREMENT OF KIRSTEN FLAGSTAD

With the close of the 1940-41 season, the Metropolitan Opera suffered its greatest loss since the death of Enrico Caruso. This resulted from the departure of Kirsten Flagstad for her native Norway, where she has remained. Mme. Flagstad was last heard at the Metropolitan on April 13, 1941, when she sang Isolde in the third and last of three post-season performances. In the other two she was cast as Kundry in "Parsifal." Because of the Norse soprano's inability to return for the season of 1941-42, "Tristan und Isolde," which had been one of the most popular of operas throughout the seven seasons of her American appearances, was dropped temporarily from the repertory, though "Parsifal" was retained.

METROPOLITAN'S FALL SEASON

The new opera season which began on Nov. 24, 1941 was the fifty-seventh in the history of the Metropolitan, there having been two years in the 59 years since the opening of the house in 1883 when there was no opera. Mozart's "Nozze di Figaro" was the opera chosen for the opening night. Though no successor for Mme. Flagstad was in sight, considerable reliance was placed on the American soprano, Helen Traubel, for the heavier Wagnerian roles. A surprise singer was found in Astrid Varnay, a young Swedish-American soprano who, at the age of 23, substituted for Lotte Lehmann as Sieglinde in "Die Walküre" on Dec. 6 without any previous stage experience, and for Mme. Traubel as Brünnhilde in the same

opera on Dec. 12, without a rehearsal. Of other debuts, that of the tenor, Jan Pearce, already widely known for his many appearances at Radio City Music Hall, was the most successful of those made before the end of the year. It was on Nov. 29, as Alfredo, that he sang in a matinee performance of Verdi's "La Traviata."

Revivals of Donizetti's "L'Elisir d'Amore" on Nov. 28, in Italian, and Mozart's "Magic Flute" on Dec. 11, in English, were the chief additions to the repertory in the 1941 portion of the new season. "La Traviata" and Puccini's "Tosca," the latter with Grace Moore, also were restored to the active lists after brief absences. Bruno Walter conducted "The Magic Flute," as he did also a special performance of Mozart's "Don Giovanni" on Dec. 5, the 150th anniversary of Mozart's death. The most notable new disclosure among the singers' impersonations was that of Salvatore Baccaloni as Doctor Dulcamara in "L'Elisir d'Amore."

PHILHARMONIC'S CENTENNIAL YEAR

On Oct. 9 the Philharmonic-Symphony Society of New York began the celebration of its Centennial with its first concert for the season of 1941-42 in Carnegie Hall. Ten conductors in all were announced for the gala year. Leopold Stokowski was the first of these to appear, conducting the programs of the first fortnight. Thereafter came John Barbirolli, the orchestra's regular conductor; Bruno Walter, Artur Rodzinski, and Dimitri Mitropoulos. Remaining to appear after the turn of the year were Fritz Busch, Eugene Goossens, Walter Damrosch, Sergei Koussevitzky, and in a post-season series, Arturo Toscanini. Special permission had to be obtained from the American Federation of Musicians for Dr. Koussevitzky to be one of the Philharmonic-Symphony's "guests," because of the non-union status of the Boston Symphony, which he regularly conducts. Rudolph Ganz remained as conductor of the Young People's Concerts.

Overwhelmingly American in ori-

gin was the new music played by the various orchestras which gave concerts in New York during 1941. Very little new music was imported from Europe. This was to be attributed almost as much to America's greatly increased consciousness of what its native and adopted composers have been accomplishing as it was to the effects of the war. With so many composers of European birth having taken up residence in this country, there was every reason to expect that the best "European" music would be written here. Works like Paul Hindemith's new Symphony in E flat, first played by the New York Philharmonic-Symphony on Christmas night, and Sergei Rachmaninoff's "Symphonic Dances," introduced to New York by the Philadelphia Orchestra on Jan. 7, 1941, were indicative of the trend. The Good Neighbor Policy led to some importations from South America, but not many. Juan Jose Castro, elder of the Argentine's Castro brothers, introduced Luis Gianneo's "Overture to a Children's 'Comedy'" and his own "Sinfonia de las Pampas," the former on Dec. 2, the latter on Dec. 16, when he conducted the NBC Symphony as guest. On March 12, 1941, Mr. Barbirolli made Philharmonic-Symphony subscribers acquainted with Heitor Villa-Lobos's "Discobrimento do Brasil".

The Philharmonic-Symphony's grand total of concerts for the 1940-41 season was 118. Included were 28 Thursday-Friday pairs, 28 Sunday concerts, 14 Saturday, nine for young people, two for the Philharmonic-Symphony League, the Toscanini series of six, and the remainder out of town.

Full-fledged symphonies by American composers, native or adopted, heard in New York for the first time during the calendar year, included Symphony, Opus 58, by Eugene Goossens, on March 20; Symphony No. 2 in C, by Virgil Thomson, Nov. 25; Symphony No. 3 by William Schuman, Nov. 22; Symphony No. 1, by David Diamond, Dec. 21; Symphony No. 2, by Bernard Wagenaar, March

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8; Symphony No. 3 by Nicolai Bere-zowski, March 15; "Sinfonia Biblica," by Nicolas Nabokoff, Jan. 2; and, in the summer season at the Lewisohn Stadium, Robert Russell Bennett's Symphony in D, "For the Dodgers," which made use of the services of a baseball announcer as commentator in its final movement. The year brought to attention many other American works in other forms—overtures, suites, tone-poems, concertos, etc. Outside of New York, other orchestras befriended the American composer quite as liberally—some more so.

OTHER SYMPHONY CONCERTS

Besides the Philharmonic-Symphony, New York heard concerts regularly by the NBC Symphony, a series conducted by Leopold Stokowski being given in Mecca Temple, whereas those under various conductors were broadcast from Studio 8-H in Radio City; the National Orchestral Association, which presented young soloists with its training ensemble, under Leon Barzin; the City Symphony, a WPA organization, with the backing of Mayor LaGuardia and a variety of conductors, including Sir Thomas Beecham; and the visiting Boston Symphony and Philadelphia Orchestra. The National Symphony, conducted by Hans Kindler, was another visitor.

NEW OPERA COMPANY AND NATIONAL ORCHESTRAL ASSOCIATION

The Metropolitan was not alone in ministering to New York's operatic needs. The New Opera Company, formed with the object of aiding worthy young American singers to put their gifts and their training to some practical use, undertook a six-weeks season that included performances of Mozart's "Così fan Tutte," Tchaikovsky's "Pique Dame," Verdi's "Macbeth," and Offenbach's "La Vie Parisienne," at the Forty-Fourth Street Theatre, beginning Oct. 14. Conductors were Fritz Busch, Hermann Adler and Antoon Dorati. The Tchaikovsky and Offenbach works

were sung in English, the others in the original Italian. The National Orchestral Association also undertook experimental performances of operas in English and with young American singers, presenting Puccini's "Suor Angelica" and "Gianni Schicchi" and Leoncavallo's "Pagliacci."

CHICAGO OPERA

The Chicago Opera Company was reorganized for the season of 1941-42 with Fortune Gallo as general manager and Giovanni Martinelli as artistic director. Eighteen operas were presented in the 1941 season, which opened at the Civic Opera House on Nov. 8 with Verdi's "Un Ballo in Maschera" and continued for five weeks thereafter. Of these, 12 were in Italian, three in French, two in English, and one in German. Seven of the operas were given twice and one opera, Bizet's "Carmen," had three performances.

The management announced at the season's close that the annual deficit had been cut to something under \$20,000, a sum about one fifth that of the last previous deficit. The average attendance was about 90 per cent of capacity, as compared to a past record of around 65 per cent, as an average, for seasons of opera given at the big Civic Opera House. In a season of 26 performances, 16 were listed as sell-outs.

Operas performed in succession to "Un Ballo in Maschera" included Donizetti's "La Fille du Regiment," Gounod's "Faust," Rossini's "Il Barbiere di Siviglia," Verdi's "La Traviata," Bizet's "Carmen," Puccini's "Tosca," "La Bohème" and "Madame Butterfly," Leoncavallo's "Pagliacci" and Mascagni's "Cavalleria Rusticana" in double bill, Wagner's "Lohengrin," Flotow's "Martha" (in English), and Verdi's "Aida," "La Traviata," "Falstaff" (in English), "Otello," "Il Trovatore," and "Rigoletto".

PHILADELPHIA OPERA

The Philadelphia Opera Company, of which Sylvan Levin is artistic director and Henry Gerstley president,

opened its new season with Gounod's "Faust" on Nov. 18 at the Academy of Music. It was sung in English and presented one of three interesting experiments whereby roles of male characters traditionally sung by women were entrusted to men. The roles in question were Siebel in "Faust," Cherubino in Mozart's "Marriage of Figaro," and Octavian in Strauss's "Rose Cavalier" ("Der Rosenkavalier"). All were sung in English—the Strauss work for the first time in the vernacular in America. Ravel's "L'Heure Espagnol" and Puccini's "La Bohème" and "Il Tabbarro" were other operas presented in 1941, as were Debussy's "Pelléas et Mélisande," Menotti's "Old Maid and the Thief" (originally conceived as a radio opera without action), and Reznicek's "Spiel oder Ernst," which was accorded its American premiere with the English title of "Fact or Fiction" on Feb. 11. Also active in Philadelphia was the La Scala Opera Company, which in 1940 gave performances of "Lucia," "Cavalleria Rusticana," "Pagliacci," "Rigoletto," "Tristan und Isolde," "Il Barbière di Siviglia," and "Aida." Its new season opened on Oct. 30 with Giordano's "Andrea Chenier." Subsequent performances before the end of the year included "Rigoletto" and "Madame Butterfly."

CINCINNATI

After the announcement was made that the Cincinnati Zoo Opera had been abandoned, a guarantee fund was raised and the institution opened its twentieth summer season on June 29 with "Il Trovatore," which was followed at subsequent performances by "Carmen," "Lucia," "Madame Butterfly," "Otello," "Rigoletto," "Samson et Dalila," "Il Barbière," "La Traviata," "Aida," "Manon," "La Bohème," "Tosca," "Cavalleria Rusticana," with "Pagliacci," "Mignon," "Il Trovatore," "Faust," "Carmen," and "Rigoletto," the season closing on Aug. 8.

BALTIMORE AND ST. LOUIS

Performances of the Baltimore Civic Opera included one of "Rigo-

letto," with Robert Weede as guest artist in the title role, and "Blossom Time" with John Charles Thomas as guest.

The St. Louis Grand Opera Association opened its fourth season, at the Municipal Opera House on April 16 with Mozart's "Don Giovanni." It gave performances of "Mignon," "Traviata," "Cavalleria Rusticana," and "Pagliacci" in its spring season. On Oct. 18 it began its fall season with Flotow's "Martha," sung in English. "Tosca" and "Falstaff" were other operas given in this series, under the musical and artistic direction of Laszlo Halasz.

PACIFIC COAST OPERA

A season of 31 performances, starting in Portland, Ore. on Oct. 2 and concluding in Los Angeles on Nov. 9, was the 1941 schedule of the San Francisco Opera Company, of which Gaetano Merola is the director general. The out-of-town schedule included three performances in Portland, three in Seattle, two in Sacramento, and six in Los Angeles. Operas presented either on the tour or in San Francisco included "Don Pasquale," "Rosenkavalier," "La Fille du Regiment," "Manon," "Rigoletto," "Tannhäuser," "Tosca," "Madame Butterfly," "Il Barbière," "Carmen," "L'Amore dei Tre Re," and "Simon Boccanegra." The home season in San Francisco began on Oct. 13 with "Don Pasquale," and closed on Nov. 1 with "Simon Boccanegra." The season was declared the most successful in the history of the company.

CHICAGO SYMPHONY

The Chicago Symphony completed its Fiftieth Anniversary season on April 18 with Frederick Stock conducting, and on April 24 gave a post-season concert, for its pension fund, conducted by Arturo Toscanini as guest. The season was a notable one for the performance of new American works, a considerable number of which had been composed especially for the orchestra's celebrational year. The 1941-42 season opened Oct. 16 under Mr. Stock's leadership. In co-

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operation with the Civic Orchestra, the popular series on Saturday nights was increased from 14 to 18. One hundred and thirteen concerts were included in the orchestra's schedule, 99 of these in Orchestra Hall. Dr. Stock entered upon his thirty-seventh season as conductor and Hans Lange his sixth season as associate conductor. Thirty-one soloists were announced to appear with the orchestra in the season of 1941-42.

BOSTON SYMPHONY

The Boston Symphony, conducted by Sergei Koussevitzky, gave its last New York concert of the 1940-41 season on April 5 and concluded its home season in Boston on May 3. Dr. Koussevitzky, now an American citizen, inaugurated the orchestra's sixty-first season on Oct. 25 in Boston's Symphony Hall, and on Nov. 20 he conducted the first concert of the orchestra's fifty-sixth season in New York. Désiré Defauw, Belgian conductor now active in Canada, led the orchestra as guest in a pair of concerts Nov. 28-29. The 1941-42 schedule calls for the customary 24 pairs of Friday-Saturday concerts and a Monday-Tuesday series of six concerts in Boston; six concerts in Cambridge; ten concerts in Carnegie Hall, New York, on Thursday evenings and Saturday afternoons; five concerts in Brooklyn; and various out-of-town events. James C. Petrillo, president of the American Federation of Musicians, declined to permit Bruno Walter to appear with the orchestra as guest conductor, because it is a non-union organization.

PHILADELPHIA ORCHESTRA

The Philadelphia Orchestra ended its 1940-41 season with visits to various cities, its furthest journey afield being to Toronto, where it played in Massey Hall on May 5 and 6 under the leadership of its regular conductor, Eugene Ormandy. Its tenth and final appearance of the season in New York was on April 1, when Leopold Stokowski conducted a performance of Bach's "St. Matthew Passion," in which the Westminster Choir collabo-

rated with the orchestra, the soloists being chosen from the Westminster Choir School. After the close of its home season, the orchestra played at the Bethlehem and Ann Arbor Festivals. Its 1941-42 season—forty-second of its history—was opened by Mr. Ormandy at the Academy of Music on Oct. 3. The personnel of 99 instrumentalists was virtually unchanged from the last season. Its first New York concert of the ten scheduled for the new season was given in Carnegie Hall on Oct. 14. For the first time since 1912, Leopold Stokowski had no official connection with the orchestra or its concerts. The schedule in Philadelphia called for 28 Friday-Saturday pairs, a Monday evening series of ten, and six concerts for youth, all in the Academy of Music. Mr. Ormandy was announced to lead all concerts but four, these to be directed by Sir Thomas Beecham, Sir Ernest MacMillen, Sergei Rachmaninoff, and the orchestra's associate conductor, Saul Caston.

CLEVELAND, CINCINNATI, AND ST. LOUIS

At the close of its 1940-41 season, the Cleveland Orchestra launched a drive for its maintenance fund. With Artur Rodzinski continuing as conductor and Rudolph Ringwall as associate conductor, the orchestra opened its twenty-fourth season on Oct. 9 in Severance Hall. Efrem Kurtz was engaged as guest conductor for one pair of concerts in addition to dividing with Franz Allers the leadership of a series of performances by the Ballet Russe de Monte Carlo in which the orchestra participated.

Conducted by Eugene Goossens, the Cincinnati Symphony participated in the events of Cincinnati's May Festival after the conclusion of its 1940-41 season. Mr. Goossens led the first concert of the 1941-42 season in historic Music Hall on Oct. 17. The annual series includes 20 concerts, with five for young people.

The St. Louis Symphony entered its sixty-second regular season on

XXVI. THE ARTS

Oct. 31 at the Municipal Opera House. Vladimir Golschmann at the same time began his eleventh year as permanent conductor of the orchestra. Igor Stravinsky, Darius Milhaud, and Edwin McArthur were announced as guest conductors. The schedule calls for eighteen Friday-Saturday pairs of subscription concerts and a series of Sunday "Pops".

NATIONAL SYMPHONY

Assured of financial security in its new season, after a period of uncertainty in which a campaign fund was sought and raised, the National Symphony Orchestra of Washington, D.C., inaugurated a series of "Pop" concerts in the interim between the conclusion of its Watergate summer concerts and the opening of its new season. On Nov. 2 Hans Kindler, who has conducted the National Symphony since its inception in 1931, conducted the introductory program of the 1941-42 series, scheduled to include eight midweek concerts and two series of Sunday afternoon concerts in Constitution Hall; also a children's series and two special performances in conjunction with the Ballet Russe. As an educational service, the orchestra's activities include 21 student concerts in fifteen schools.

DETROIT

After a dispute between the Detroit Federation of Musicians and the management of the Detroit Symphony had threatened to nullify plans for the 1941-42 season, a settlement of the issues involved enabled the orchestra to present its opening concert on Oct. 16, with Bruno Walter conducting. By the settlement the season was extended from 21 to 22 weeks. After the opening, concerts were conducted by Victor Kolar, Howard Barlow and Burle Marx. Mr. Kolar is the resident conductor. Also listed to appear as guests were Wilfred Pelletier, Sir Thomas Beecham, Tauno Hannikainen, and Désiré Defauw.

MINNEAPOLIS

With Dimitri Mitropoulos as its regular conductor, the Minneapolis

Symphony opened its new season in Northrup Auditorium on the University of Minnesota campus, Oct. 24. Vladimir Golschmann took over its leadership for the period when Mr. Mitropoulos was in New York conducting the Philharmonic-Symphony as guest. The orchestra has a regular series of 18 Friday night concerts, plus five special feature concerts and a series of seven Sunday afternoon "Twilight" concerts. Three concerts are given for public school children. A new acoustical shell in the auditorium is looked upon as of benefit to the sound of the ensemble.

PITTSBURGH AND INDIANAPOLIS

The Pittsburgh Symphony opened its 1941-42 season in Syria Mosque on Oct. 10, with Fritz Reiner conducting. The schedule includes 16 pairs of concerts, as in the season of 1940-41.

In the season of 1940-41, the Indianapolis Symphony celebrated the fifth anniversary of its reorganization as a professional orchestra under the leadership of Fabien Sevitzky. It presents ten pairs of Friday afternoon and Saturday evening subscription concerts and five Sunday afternoon programs in the Murat Theatre. In addition, six children's concerts are on the schedule, four of which are sponsored by the Indianapolis Foundation in the public high schools. The new season opened on Nov. 7. Mr. Sevitzky includes an American composition on every program.

ROCHESTER

José Iturbi conducted the Rochester Philharmonic at its opening concert of the 1940-41 season at the Eastman Theatre on Nov. 6. The schedule is for 12 evening concerts, conducted either by Mr. Iturbi, now in his sixth season with the orchestra, or his associate, Guy Fraser Harrison. The orchestra participated in the annual American Music Festival, April 28 through May 2, as did the Rochester Civic Orchestra, led by Mr. Harrison and by Dr. Howard Hanson, director of the Eastman School of Music and leading spirit of the annual festival.

MUSIC AND THE OPERA

BALTIMORE, BUFFALO, KANSAS CITY

Conducted by Howard Barlow, the Baltimore Symphony began its twenty-sixth season in the last days of the year 1940 and is now embarked upon its twenty-seventh with the same conductor in charge. Its activities include a series for young people and an experimental series in which music represents national characteristics.

The Buffalo Philharmonic began its 1940-41 season in November, conducted by Franco Autori, who entered upon his sixth consecutive year with the organization. Numerous additions were made to the personnel. Broadcast concerts and concerts for children have been added to the orchestra's schedule.

One of the most progressive of American orchestras, the Kansas City Symphony, inaugurated its ninth season on Nov. 11 in the Music Hall of the Municipal Auditorium. The orchestra's program for 1941-42, under the leadership of Karl Kruger, includes 20 subscription concerts, eight young people's matinees, a series of popular concerts, and three special events.

SAN FRANCISCO

Aided by a fund drive, the San Francisco Symphony began its 1941-42 season free from debt. The first concert was given on Dec. 5, with Pierre conducting. Twelve pairs of concerts are included in the season. Igor Stravinsky and Charles O'Connell are listed as guest conductors. On Dec. 2 the orchestra celebrated its thirtieth year with a gala fete in the Civic Auditorium, sponsored jointly by the Art Commission, Musical Association, Musicians Union Local, and San Francisco Chamber of Commerce.

LOS ANGELES

Under the baton of John Barbirolli, regular conductor of the New York Philharmonic-Symphony, the Los Angeles Philharmonic opened its new season on Nov. 20. Other guests for the season include Alfred Wallenstein, Bruno Walter, George Szell and Al-

bert Coates. In all, 50 concerts will be given in Southern California cities. Twelve pairs of Thursday-Friday concerts and a series for young people have been scheduled for Los Angeles by the Southern California Symphony Association, which has now entered upon its eighth season as sponsor for the orchestra.

SEATTLE

The Seattle Symphony, which ended its 1940-41 season under Nikolai Sokoloff on Feb. 17 (save for a special post-season concert on March 17 at which Edwin MacArthur conducted for Kirsten Flagstad), began its 1941-42 season on Oct. 30 with Sir Thomas Beecham conducting. The orchestra personnel was enlarged and a new shell installed in Music Hall. The series embraces eight events.

DALLAS AND DENVER

The Dallas Symphony concluded its 1940-41 season on Feb. 7 and gave the first concert of its new season at Fair Park Auditorium on Nov. 16, with Jacques Singer conducting. The Denver Symphony, conducted by Horace E. Tureman, opened the 1940-41 series of subscription concerts on Oct. 20 at the City Auditorium.

SUMMER CONCERTS

Among outstanding summer concerts were those of the Berkshire Festival, given by the Boston Symphony, conducted by Serge Koussevitzky; Philharmonic-Symphony in the Lewisohn Stadium in New York; Philadelphia Orchestra in Robin Hood Dell in Philadelphia; Hollywood Bowl concerts by the Los Angeles Philharmonic; those at Grant Park and Ravinia in Chicago by the Chicago Symphony; and the Watergate Concerts in Washington, D.C. by the National Symphony. These and other series filled the months of July and August. The Chautauqua summer opera continued its performances in Norton Memorial Hall under the general direction of Albert Stoessel, with Alberto Bimboni and Gregory Ashman as conductors and Alfredo Valenti as stage director.

MISCELLANEOUS MUSICAL EVENTS

The International Society for Contemporary Music held its eighteenth festival in New York, May 16-27, this being the first such event in America. Past festivals were held in Salzburg, Prague, Venice, Zurich, Frankfort, Siena, Geneva, Liège, and Brussels, Oxford and London, Vienna, Amsterdam, Florence, Barcelona, Paris, and Warsaw. Roger Sessions, president of the American section of the Society, acted as chief spokesman for the festival hosts. A series of programs, devoted entirely to music by contemporaries was given at Columbia University, Forty-Second Street Library, Museum of Modern Art, and in vari-

ous radio theatres or studios. Broadcasting was called upon to play a part beyond that of its role at any past festival of the society. Many composers formerly active abroad were present, with a considerable number of them represented on the programs, along with some of their American confreres. The National Federation of Music Clubs held its twenty-second biennial convention in Los Angeles, June 18-26, with a multiplicity of discussions and musical programs. Mrs. Guy P. Gannett of South Portland, Me. was elected president to succeed Mrs. Vincent Hilles Ober of Norfolk, Va., who had completed her second term.

THE THEATRE

By BEN BRADFORD

DRAMA DEPARTMENT, *The New York Times*

THE THEATRE AND THE WAR

The bombs that screeched down from Japanese planes on Pearl Harbor during that Sunday afternoon in December had their effect, too, on the American Theatre. The first shock of the news was by no means a boom for the box office. Immediately the demand for tickets fell off to a startling degree in all the theatres on Broadway. Only the shows with large advance sales managed to go along at a normal rate. The serious war dramas suffered the most. The public wanted to forget the war when they went to be entertained. The musical comedy "Let's Face It," which had a tremendously funny war background, packed the house, but the serious "Wookey" speeded to a quick demise. The American Theatre is too strong an institution, however, to be held down long by the first stinging blow of war. All the folk in the theatre from star to stage hand stood up with a grim smile and seemed to say, "This is our fight, too. What can we do to help?"

The American Theatre Wing formed the American Theatre Wing

War Service to help in every way to win the war. At one meeting the members pledged \$100,000 towards the war effort. The service was divided into many different branches to take care of all the men in the armed services. From first-aid classes to the establishment of a canteen on Broadway, this group did its best to help Uncle Sam.

Before the infamous attack on Pearl Harbor the U.S.O. had formed Camp Shows, Inc. to entertain men in the army camps. This organization, with Eddie Dowling as president, tackled the colossal task of bringing shows of all kinds to the men in uniform. During the first week in December they established the "Stars and Stripes Circuit," made up of 11 shows, to tour 65 Army camps throughout the country. Although the emphasis was on vaudeville, this group included two straight plays, "Junior Miss" and "Out of the Frying Pan."

A second unit entitled "The Red White and Blue Circuit" is now touring 160 Army camps. The admission charge is only 15 and 20 cents. Many

famous stage and screen stars contribute their services as well as many "name" dance bands.

The Defense Recreation Center in New York City, through the cooperation of theatre managers, gave out more than 500,000 tickets to entertain men on leave.

Theatre staffs have been instructed on activities in case of an air raid. The first box office slump has passed. With the courage that is part of the theatrical tradition, the entertainment world looks to the future with faith and hope. In this crisis the theatre will do its part to help win the war.

LONG RUNS

"Tobacco Road."—The year 1941 marked the final milestone for the eonic career of "Tobacco Road." The play first opened on Dec. 4, 1933, and continued through May 31, 1941. All records were broken by this phenomenon of the modern theatre. In years to come, theorists will still be trying to find the secret of its success, and the betting odds are pretty good that they won't succeed.

"Hellzapoppin."—Another theatrical freak, "Hellzapoppin," rang down its final curtain after 1,402 noisy evenings. No other musical(?) ever came close to that mark, nor will one for some time to come. For Olsen and Johnson, this one was truly the goose that laid the golden egg.

"Life With Father."—A new contender for a long run on Broadway is the Lindsay-Crouse production, "Life with Father," which rolls merrily along after opening on Nov. 8, 1939. If the box office keeps humming as it is now, the writer of this summary next year will still be listing this play as a true veteran.

PRIZES

Sherwood.—The Pulitzer prize was won by Robert E. Sherwood's "There Shall Be No Night." This marked the third time Sherwood has been the winner of the prize. Alfred Lunt and Lynn Fontanne starred in the production, which dealt with the gallant stand of Finland against Russia in 1939.

Herman Shumlin walked off with two prizes awarded by the Critics' Circle. His production of "The Corn Is Green" was voted the best imported play. Emlyn Williams wrote the drama of a courageous school mistress in Wales gallantly played by Ethel Barrymore.

Best Plays.—Lillian Hellman's "Watch on the Rhine" was selected as the best American play. The closest contender was "The Beautiful People" by William Saroyan.

THE BUSINESS PHASE

Willie Bioff and George E. Browne, the labor bosses, came to the end of a road well paved with graft when they were sentenced to ten and eight years respectively for extorting \$1,200,000 from the film industry under the threat of stirring the 125,000 members of the International Alliance of Theatrical Stage Employees into strikes that would have darkened theatres throughout the country. Browne was president of the Union.

Terming Bioff a "labor racketeer" of the gangster type, United States Attorney Mathias F. Correa, who prosecuted the affair, told Judge John C. Knox: "Neither Bioff nor any other racketeer could get a foothold in any labor union if it weren't for Browne in the labor movement. His betrayal of his trust was, in a sense, a betrayal of the entire cause of labor." So ended one of the nastiest scandals in the history of theatrical labor.

NEW AMERICAN PLAYS

"Arsenic and Old Lace."—Two gentle old spinsters from Brooklyn, Aunt Abby and Aunt Martha Brewster, who delighted in having the minister to tea and whose kindness led them to poison 13 old men, with no families to care for them, provided the background for one of the year's funniest comedies. The 13 old men who drank the poisonous elderberry wine given them by the sisters were buried in the house by a member of the family who thought himself to be Theodore Roosevelt. Another relative, resembling Boris Karloff and

cleverly played by none other than Boris Karloff, appeared during the course of the evening as a bit of a maniac himself. The weird merri-ment of the plot hinged on the efforts of the sisters' nephew, a drama critic, to conceal the murders and get his aunts into an institution. Josephine Hull and Jean Adair played the Brewster sisters to perfection. Allyn Joslyn won high praise as the drama critic. Joseph O. Kesselring wrote the comedy and arrived with his first Broadway hit. Much credit was given to the expert direction of Bretaigne Windust. Howard Lindsay and Russel Crouse, authors of "Life with Father," produced the play, which despite its macabre qualities, has kept laughter ringing out on West Forty-sixth Street since opening night.

"Mr. and Mrs. North."—Murder continued to be the comic theme of "Mr. and Mrs. North" which opened two days after "Arsenic and Old Lace." By no means as hilarious as the latter, this play by Owen Davis, based on the *New Yorker* stories of Richard Lockridge, told the story of a young married couple, adroitly played by Albert Hackett and Peggy Conklin, who returned to their Greenwich Village apartment one night and found a corpse stuffed in the liquor closet. From that moment the search for the murderer was carried out amid cocktail drinking, with a charming police officer and various suspects. Alfred de Liagre directed the comedy, and Jo Mielziner designed the set. The script was not as polished nor as compact as it should have been, but it provided a pleasantly unimportant evening in the theatre.

"Claudia."—After deserting the theatre for nine years, Rose Franken returned as author and director of "Claudia," a delightful comedy which dealt with the coming of age of an imaginative but slightly ignorant young lady. Dorothy McGuire, in the title role, proved herself to be an important and charming addition to the American theatre. The part was not an easy one, for Claudia could have been an unbelievable, even irritating young lady, but Miss Mc-

Guire succeeded in interpreting her with grace and charm. Frances Starr gave an expert performance as Claudia's mother, to whom her daughter had an abnormal attachment. Donald Cook was satisfactory as her husband. The comedy scenes were far superior to the serious undertones of the play. Donald Oenslager designed the set. The most exciting features of the play were the promise shown by Miss McGuire and the return of Miss Franken as a playwright.

"The Talley Method."—The critics agreed that the comedy aspects of "The Talley Method" were as finely written as anything S. N. Behrman ever created, but when he turned, in the latter half of the play, to a philosophical mood, the comedy lost much of its charm and coherence. Dr. Talley, a widower with two children, who had great knowledge of surgery but little understanding of the human mind, married Enid Fuller, a poetess, who overflowed with compassion. The conflict between the two characters and its effect on the children made up the theme of the play. Ina Claire and Philip Merivale, in the leading roles, excelled in the comedy scenes, but they, too, suffered when the play turned serious. Claire Niesson, Dean Harris, and Ernest Deutsch were members of an excellent supporting cast. Had Mr. Behrman stuck to his comedy and slackened his philosophy, the audience would have been happier.

"Native Son."—Theatre-goers were electrified with the power of "Native Son," a play based on the best selling novel of Richard Wright. Dramatized by Wright and Paul Green and staged by Orson Welles, the play told the forceful story of Bigger Thomas, a Negro, caught in the terrifying web of race prejudice. One night he accidentally killed his employer's daughter. This led to a man-hunt through the slums of Chicago and ended with his sentence to death. More than a murder story, this drama of the conflict in one individual's mind touched on the nerve center of race prejudice and fear. Bitter, biting, and merciless, the production struck with

force at the Negro problem in America. Not until he sat in the death cell did Bigger realize he was a member of the human race. Canada Lee, a former prize-fighter, violinist, and band leader gave a magnificent performance as Bigger. Ray Collins played the defense lawyer graphically. Welles staged the drama in ten brilliant scenes with no intermission. Unconventional and realistic, "Native Son" proved to be one of the most important events of the season.

"Watch on the Rhine."—Without sermonizing, Lillian Hellman delivered a powerful message against Fascism in her play "Watch on the Rhine." Believing the death of Fascism to be more important than the lives of those who hate it, she told the story of a German, Kurt Mueller, who came to this country with his wife and three children to seek refuge. They went to the home of his wife, where there also was staying a Rumanian count and his rich American wife. Mueller emerged as a strong and courageous worker of the underground party in his country. When the count discovered this he resorted to blackmail. Mueller was forced to murder him and return to almost certain death in Germany. The conflict between the Rumanian, sinisterly played by George Coulouris, and the German was the central theme of the play, but Miss Hellman, in the strength of her characters, managed to show the contrast between the simple uprightness of Americans as compared to the calousness of Europeans. As Kurt Mueller, Paul Lukas returned to the stage from Hollywood to give one of the most sincere and powerful performances of the season. Mady Christians played his wife with depth and charm. As the mother, Lucile Watson was delightful. Herman Shumlin produced and directed the play with exceptional skill. After many tries by other writers, Miss Hellman created the first great play against Fascism.

"The Beautiful People."—With his complete love of life and human nature, William Saroyan turned up with a delightful comedy, "The Beau-

tiful People." The central figures in the play were members of the Webster family who dwelt in a strange little house on Red Rock Hill, above San Francisco. With true Saroyan spirit, their main source of income was a monthly check addressed to a man who had died years ago. A son of the family, Owen, spiritfully played by Eugene Loring, wrote a book consisting of the one word "trees." So much did his sister love the mice in the home, the family called her "Sister Agnes of the mice." All in the spirit of good cheer and with a froth of delight, the play was a zestful addition to the season. The critics were pleased but slightly baffled. Saroyan staged the play and backed it with his own money. At one time during the run he offered to refund all money to those not liking the play. There were few takers.

"The Wookey."—In the character of the Wookey, Frederick Hazlitt Brennan created a powerful play on the true value of human freedom. The Wookey was an incredible little man who loved his family and criticized his government, but when the blitz came to London and killed his wife he came to understand the things his country fought for. The play was filled with wit, action, and pathos, but all the emotions were kept well in hand and not allowed to run over into exaggeration. Edmund Gwenn, as the Wookey, gave a salty, wonderful performance. He made an unbelievable man seem real as life. Carol Goodner as the wife and Heather Angel as his daughter were most convincing. Jo Mielziner did a tremendous job of designing homes smashed by Nazi planes. The sound effects, recorded in London during a real air raid, were most realistic, even terrifying. As a symbol of freedom, the Wookey hit the spot and as a character on the stage, he was fascinating.

"Candle in the Wind."—Critics and many theatregoers were greatly disappointed in "Candle in the Wind" by Maxwell Anderson. Probably more famous talent went into this production than in any other for the season, but the result was a talky

play without much vitality. The plot dealt with the attempts of an American actress to rescue a French journalist imprisoned by the Nazis a year ago. Many bitter accusations against Nazi philosophy and ethics were included in the course of the story. No one in this country would argue with the message of the play, but somehow Anderson failed to make his theme poignant and vital. Helen Hayes gave an emotional and finished performance as the actress. Alfred Lunt directed with thoroughness. The sets were magnificently designed by Jo Mielziner. To say the combined talents that went into the production were a waste of time would be an overstatement, but the result of their efforts was not up to expectations.

"The Land Is Bright."—The story of an American family by the name of Kincaid provided the plot for "The Land Is Bright" by George S. Kaufman and Edna Ferber. Beginning in the 1890's, the family history is brought down to the present. The message of the play lies in the theory of the authors that the present time is the greatest in American history. The production got off to a lusty start, but ended on a rather pedantic plane. Flora Campbell, Martha Sleeper, Ralph Theodore, Diana Barrymore, and Hugh Marlowe stood out in a large and competent cast. Jo Mielziner created some magnificent settings. The production never lived up to the promise of the first act, but as a whole it was a convincing panorama of recent historical developments in this country.

"Theatre."—"Theatre" marked Cornelia Otis Skinner's first appearance on Broadway in a full length play with a complete cast of characters. Based on the novel by Somerset Maugham, the play was written by Guy Bolton and Maugham. Not much more than the original title remained in the story of a fashionable actress and actor in London whom the public thought to be happily married but who had been divorced for years. After many episodes, the theatre brings them together again.

Witty, sophisticated dialogue made the hackneyed plot seem shiny but not substantial. Miss Skinner played the actress with infinite charm. Her beauty and poise added greatly to her performance. John Golden directed the play with his customary skill. A gorgeous living room in Hampstead was designed by Donald Oenslager. Arthur Margetson, as the actor, was extremely polished. A loyal servant was well done by Viola Roache. The production aimed at the sophisticates, achieved its purpose. There was more gilt than gold but the color was pretty.

"Junior Miss."—Based on the Sally Benson stories from the *New Yorker*, "Junior Miss" by Jerome Chodorov and Joseph Fields turned out to be a delightful play of an average American family. The antics of the two daughters, Lois and Judy Graves, provided the action and humor of the production. Judy, a fat and mischievous young female, thought it her duty to run the lives of her family. The result almost cost her father his job and led to embarrassing results for the rest of the family. Moss Hart directed the play with verve and gayety. Joan Newton and Patricia Peardon, as the two sisters, were the real thing. The parents were sincerely played by Philip Ober and Barbara Robbins. Not an important play, perhaps, but certainly one of the most entertaining of the season.

"Hope for a Harvest."—Sophie Treadwell, believing the American farmer has not been doing right by his native land, decided to write a play on that theme and turned up with "Hope for a Harvest." Unfortunately she did not arrive at a satisfactory solution for her problem and in the development she resorted to too much wordage. The California farmer, thinks Miss Treadwell, has developed into a whining individual full of alibis, who lets his land be taken over by immigrants to cultivate and harvest. In the role of Carlotta Thatcher, an American home from Europe who spurs the farmer on to better things, Florence Eldridge gave

a sincere and moving performance. As a farmer who overcame his disillusion, Fredric March proved himself to be an actor of depth and character. Alan Reed put a lot of zest into his interpretation of an Italian farmer. With a good conflict in mind, this Theatre Guild production never succeeded in solving its problem. Miss Treadwell's "Machinal" will live longer in the minds of theatregoers than "Hope for a Harvest."

"Clash by Night."—Clifford Odets did not add a great deal to his cherished reputation as the white-haired young playwright of the American theatre with "Clash by Night." His individual scenes were expertly written, but the story of the age-old triangle did not have the completeness of a finished artist. Tallulah Bankhead, as the apex of the geometrical figure, gave a fine performance, and added greatness to a mediocre play. As one of the angles in the triangle, Joseph Schildkraut returned to Broadway in his first interpretation of an American character, and Lee J. Cobb continued his career with a strong delineation of a bewildered man caught in the web of an unhappy marriage. Best to say that Odets, vastly talented, still may have his greatest plays before him. Lee Strasberg directed with extreme skill, and Boris Aronson designed several startlingly realistic sets.

SPECTACLE AND MUSIC

"Liberty Jones."—Philip Barry had high ideals when he wrote "Liberty Jones," a musical allegory with Liberty as the theme. Unfortunately he was not able to clarify his subject in a unified stirring message. The audience was confused as to just what he meant. The fantasy and meaning were hidden under the elaborateness of the allegory. As Liberty Jones, young Nancy Coleman tried heroically with a part which lacked clarity and strength. John Beal played the hero's role with sincerity. Paul Bowles's music lacked the stirring under-chords needed in such a production. Mark this one down as a

sincere attempt at something great that never became great. The whole production lacked the power of its subject.

"Lady in the Dark."—The critics scurried to their dictionaries in search of new adjectives to praise "Lady in the Dark" by Moss Hart, with the unmatched Gertrude Lawrence in the leading role. The story of a fashionable editor of a woman's magazine who consulted a psychologist because of her mental and emotional conflicts was far above the usual musical comedy plot. The dialogue was written in the best Hart style. Kurt Weill contributed a fine musical score with lyrics by Ira Gershwin. Miss Lawrence gave a performance that could be equaled by no other star. She carried the weight of the whole production to a triumphal conclusion. Danny Kaye emerged as a first-rate comedian, and Victor Mature made the feminine hearts flutter as a movie hero. Albertina Rash staged the dances with color and sparkle. "Lady in the Dark" set a high precedence for all musical comedies. Few will equal it.

"Best Foot Forward."—Youth was the backbone of George Abbott's charming musical, "Best Foot Forward." The slight story told of a youngster in a fashionable preparatory school who invited a movie star to the senior prom. Much to his surprise she accepted the invitation on the advice of her publicity agent. From then on the harum scarum evening was filled with a group of 'teen age performers in a production of lightness and delight. John Cecil Holm wrote the book with music and lyrics by Hugh Martin and Ralph Blane. Rosemary Lane deserted the screen for Broadway and came through in great style. Nancy Walker gave zest to the role of a 'teen-age siren. Betty Anne Nyana danced to perfection. Maureen Cannon sang with spirit. There were many more youngsters who added to the delight of the evening. Abbott continued his tradition of good clean fun with this show, a charmer.

"Let's Face It."—Another smash hit resulted from "Let's Face It." The book by Herbert and Dorothy Fields was unimportant, and the music of Cole Porter was not his best, but the cast was so full of pounce and the production so well staged by Edgar MacGregor that the lesser qualities of the show did not hinder the gayety of the evening. Danny Kaye proved the promise he made in "Lady in the Dark." His amazing singing, antics, and diction captivated the audience. He emerged as a star after the show opened. Benny Baker, of the round face, also contributed to the merriment. Jack Williams clicked in a smaller role. As the leading lady, Eve Arden gave an acid but hilarious performance. There's plenty of fun in "Let's Face It."

"Sons O'Fun."—With many a "bang," "Sons O'Fun" exploded the walls of the Winter Garden, where "Hellzapoppin" had been "poppin" for four years. Olsen and Johnson outdid themselves with this zany production. They added finish to their lavish musical numbers and they had Carmen Miranda to spread South America cheer. There was, however, so much noise rampant during the evening that one was never sure whether one was being amused or murdered. Ella Logan sang a mediocre score with gusto. Joe Besser and Frank Libuse were the funniest men in the show. Olsen and Johnson, not very funny themselves, have hit upon a formula of including the audience in the cast. This results in much hilarity but also many frazzled nerves.

"Banjo Eyes."—Eddie Cantor returned after many years in Hollywood and on the air waves as the lead in a lavish production entitled "Banjo Eyes." The book was derived from a successful comedy, "Three Men on a Horse," which regaled audiences a few years back. Vernon Duke wrote the music for the new show with lyrics by John LaTouche and Harold Adamson. The evening, though, belonged only to Mr. Cantor. His return was a triumph for himself and a few hours of joy for the sentimentalists.

SHAKSPEAREAN REVIVALS

"Macbeth."—This was very likely the best production of "Macbeth" ever seen on the American stage. Under the capable direction of Margaret Webster, the play emerged as a powerful and exciting evening. Maurice Evans and Judith Anderson proved their genius. As Lady Macbeth, Miss Anderson terrified the audience with the depth of her portrayal. The sleep walking scene was a great moment in the American theatre. As Macbeth, Mr. Evans continued his fine Shakspearean characterizations. The production was staged on a grand scale. The witch episodes were vivid, and the murder of the sovereign guest played to the hilt. A sensational evening.

"As You Like It."—This was an inferior production by Ben A. Boyer and Eugene S. Bryden. There was a minimum of charm and grace with a maximum of cuteness. The main event of the evening was the performance of Philip Bourneuf as Jacques. Helen Craig was coy and shallow in the role of Rosalind. The whole production was superficial.

"Twelfth Night."—The Chekov Theatre under the direction of Michael Chekov returned with this out-of-focus interpretation, in which Sir Toby Belch was the hero. The players and director emphasized the broad comedy. Everyone seemed to be trying too hard.

IMPORTED PLAYS

"Blithe Spirit."—Noel Coward sent over a delightful farce from London which had not the slightest taint of shell smoke or bomb splinter. He whipped up his sardonic wit to tell, of all things, a delightful ghost story. The leading character was a novelist living somewhat unhappily with his second wife. A spiritualist, who comes to his home, revives the spirit of his first wife. Before the evening passed she made the second wife into a ghost. All this blended into a sophisticated, sprightly evening filled with Coward at his funniest tricks. Clifton Webb was delightful as the plagued

MOTION PICTURES

novelist. Peggy Wood and Leonora Corbett made the most of their feminine ghosts, and John C. Wilson directed with extreme vivacity. Here was Coward at his best, a blithe spirit without shame.

"Angel Street."—The only other importation of merit was Patrick Hamilton's "Angel Street." This true thriller told of a criminal who attempted to drive his wife insane. All

kinds of rumors have been whispered as to how this play was turned down by every producer on Broadway, but Shepard Traube and Alexander H. Cohen found it to be a gold mine. Vincent Price, as the villain of the piece, was excellent. Judith Evelyn, his wife, created a furor as his long suffering spouse. This was partly hokum to be sure, but mighty terrifying hokum at that.

MOTION PICTURES

BY BOSLEY CROWTHER

MOTION PICTURE DEPARTMENT, *The New York Times*

THE WAR AND THE INDUSTRY

The constant imminence of the war which finally broke in December affected the motion picture industry no less than it did the other activities of the nation in 1941. But the cautious executives of the business, who had seen the war clouds gathering for some time and had already felt the pinch of set-backs with the loss of foreign markets in previous years, had long since battened down the hatches and prepared the industry for the storm. Budgets were rigidly limited on even the biggest films of the year and operating expenses so curtailed that domestic and British revenues were enough to carry Hollywood safely through. Not one of the large producing companies failed to show a net profit during the year. The general prosperity of the nation, induced by defense wages, was helpful, obviously.

However, the year was not devoid of headaches and trials, including legal ones, and a series of coincidental crises caused concern and embarrassment in the industry. Among them was a painful court inquiry into its devious dealings with labor racketeers, the trial of one of its leading personalities on charges of income tax fraud, and a Senatorial cuffing of the movies, out in public, for alleged preachings pro war. Although time and the outbreak of hostilities drew public attention elsewhere, the expe-

riences were neither comfortable nor profitable in the long run.

DEFENSE EFFORTS

Of course, after Dec. 7, there was no question of the industry's attitude on war, and its previous cooperative efforts throughout the year in the interest of national defense were immediately adjudged both patriotic and prescient. These efforts were in several directions. The industry, through the Hay's office's newly-formed Committee for National Defense (renamed Motion Picture War Activities Committee in December), voluntarily distributed to theatres throughout the country those films made by various agencies of the government designed to further the defense effort—Treasury Department briefies encouraging the purchase of bonds, shorts from the Office of Emergency Management surveying various defense activities, Red Cross appeals, and such. The at-cost production of training films for the Army, Navy, and Coast Guard was assumed as an industry responsibility under the supervision of the Research Council of the Academy of Motion Picture Arts and Sciences, and more than 100 of the films had been made by the end of the year.

In this latter effort, Darryl F. Zanuck, foremost producer for Twentieth Century-Fox, was enrolled as a lieutenant-colonel in the Army Sig-

nal Corps and contributed generously of his services. John Ford, an outstanding director and a Naval Reserve officer, devoted several months to the making of training films and to the instruction of Hollywood craftsmen in such work before being called to Washington in October to assume command of a Navy film unit. Robert Montgomery and Douglas Fairbanks Jr., actors, obtained commissions in the Navy for active duty. James Stewart, actor, and Garson Kanin, director, were most prominent among the many Hollywood people called to service by the draft. And, at the year-end, the steady flow of artists and technicians into military service or other war work threatened to deplete the studios of experienced and dependable personnel.

WAR PREPARATIONS

Shortly after the declaration of war by this country, President Roosevelt instructed Lowell Mellett, head of the Office of Government Reports, to serve as coordinator of all films made by the government during the war and to maintain liaison with the industry in promoting the war effort through motion pictures. In making the appointment, President Roosevelt indicated that no move would be made to limit the freedom of Hollywood, from which the industry hopefully assumed that there would be no government supervision or censorship beyond that which "national safety" compelled. Neither Mr. Mellett nor the War Activities Committee of the industry, headed by Francis S. Harmon, had given any indication of a program or a policy as the year ended, and the problem of war-film production was, to say the least, unresolved.

Hollywood itself, however, went on an immediate war-footing. Air raid shelters were hastily constructed at all the studios as a precaution against threatened Japanese attacks, gala premiers were eliminated, and daylight-saving time, against which the industry had battled stubbornly for years, was voluntarily adopted so that employees could get home before pos-

sible blackouts. The Academy Awards dinner, the big Hollywood event of the year, was cancelled, and the better part of the colony pitched into civilian war work of some kind.

SENATE INQUIRY

Until the actual beginning of hostilities, however, the studios remained fairly cautious about turning out fiction films upon war themes. Their caution was due, first, to the uncertainty of public response to such films, and, second, to their constant apprehension of political sniping from the isolationists. This apprehension was justified, for in August both Senator Burton K. Wheeler of Montana and Senator Gerald Nye of North Dakota roundly accused the industry of deliberate war-mongering, and these attacks culminated in September with an inquiry in Washington conducted by a Senate Interstate Commerce subcommittee headed by Senator Nye.

Although alarmed at the outset, the industry faced the showdown full of fight. It employed Wendell L. Willkie as counsel at a reported fee of \$150,000, presented a united front for one of the few times in its history, and stood its ground boldly against the handful of predominantly anti-interventionist Senators. The press of the nation, viewing the inquiry as an obvious abuse of Senatorial power and as a threat of censorship, rallied behind the industry. Although the hearings were marked by the rattling of several skeletons and the hurling of many abusive charges which were not in the least germane, they failed to show that the producers had any other purpose in mind than the dramatization of timely material and the making of money with their production of anti-Nazi films. After three hectic weeks, the inquiry was adjourned, and, with the outbreak of war, it went entirely into the discard.

THE SCHENCK AND BIOFF-BROWNE TRIALS

The embarrassing feature of the Senate inquiry, with its implications of venality among Hollywood big-

wigs, was that it followed by just a few months the trial and conviction in Federal Court of Joseph M. Schenck, chairman of the board of Twentieth Century-Fox, and his co-defendant, Joseph H. Moskowitz, Eastern representative of the corporation, on charges of income tax fraud. Because of Mr. Schenck's prominence in the industry and the fact that several outstanding figures, including Will H. Hays, testified on his behalf, the trial was viewed as a severe blow to the entire industry's prestige. Although sentenced to three years in prison and fined a total of \$20,000, Mr. Schenck was free, pending an appeal, at the end of the year.

Partly on the basis of evidence adduced at the Schenck trial, Willie Bioff and George E. Browne, executives of the International Alliance of Theatrical Stage Employees, A.F. of L., were brought up in Federal Court in New York, coincidental with the Senate inquiry, charged with using the union to extort a total of \$1,200,000 from the motion picture industry. Although the defendants were convicted and a most disquieting influence in the labor relations of the studios was thereby removed, the trial had unhappy reverberations which came hard upon the previous embarrassments.

Testimony revealed, for instance, that high motion picture executives had been paying off to Bioff for five years to avoid threatened labor strikes and, in the case of one executive—Harry M. Warner, president of Warner Brothers—to avoid "bodily harm." It was further revealed that the companies had attempted to keep the extortions secret by disguising the actual uses of such expenditures. Chiefly, industry leaders feared the possible public reaction to these disclosures. One immediate reaction was the filing of more than a dozen suits by stockholders against the companies and executives involved, demanding accountings of company funds. The war and its consequent preoccupations saved the industry's face from further public blushes.

As it happened, the Bioff-Browne

trial climaxed the leading labor issue of the year and of several previous years. The only other major trouble in this field was a walkout at the Walt Disney studio in Hollywood which closed the plant for several weeks and ended when Disney signed a contract recognizing the Screen Cartoonists Guild. Labor costs mounted to new highs throughout the industry.

CONSENT DECREE

The highlight of the year, so far as the industry's trade practice was concerned, was the beginning of the sale and distribution of films under the so-called "consent decree" on Sept. 1. This agreement (reached in 1940), which limits the sale of films to blocks-of-fives and requires that all pictures be pre-shown to exhibitors before they are called upon to buy, caused some operational changes but produced no grave obstacles. The main difficulty was encountered in Minnesota, where theatre owners put through the Legislature a bill making mandatory the sale of films on a season's program basis, thus annulling the consent decree. The five major producers who are parties to the agreement could do no business there for a time, but received temporary relief from the Federal courts. The matter was pending at the year's end.

Otherwise, the effects of operation under the consent decree have been variable. Some exhibitors—the very people it was intended to aid—have complained that it tends to raise the cost of films, thus providing the producers-distributors with a more profitable sales method. They also protest that it has not produced a noticeable improvement in the quality of films, which was one of the advantages hoped for it.

It was apparent at the year's end, however, that the major studios had three times as many finished pictures on their hands awaiting release as they had at the same time in 1940. The explanation given was that it takes longer to market films under the consent decree because of extended runs. If this situation continues into 1942, there will be an in-

evitable curtailment of production which may tend to improve the quality of films produced. The consent decree was still tentative and ambiguous at the close of 1941.

FILM QUALITY

On the whole, the quality of the Hollywood product during 1941 was not exceptional. A decided trend towards comedy and away from tragic or controversial subjects was apparent as a direct consequence of the world's unhappy state. Predominant among the lighter offerings were pictures having to do with marital discord and the trials of new recruits in the armed services. "Epics" and lavish productions were notably few. Among the 546 feature productions of the year, according to the count of the Motion Picture Producers and Distributors Association, were several outstanding films, however, and a pleasing run of meritorious fare.

TEN BEST PICTURES

The "ten best" pictures of the year, as selected by *The New York Times*, were:

"**The Lady Eve**," a comedy written and directed by Preston Sturges, from a story by Monckton Hoffe, and produced by Paramount, with Henry Fonda, Barbara Stanwyck and Charles Coburn in the cast.

"**Major Barbara**," adapted by George Bernard Shaw and Gabriel Pascal from Mr. Shaw's old play; directed and produced in England by Mr. Pascal, with Wendy Hiller, Robert Morley, and Robert Newton featured.

"**Citizen Kane**," a biographical drama written by Orson Welles and Herman J. Mankiewicz, directed and produced by Mr. Welles for Radio-Keith-Orpheum, with Mr. Welles and his Mercury Players, including Dorothy Comingore, Joseph Cotten, and Everett Sloane, in the cast.

"**Sergeant York**," a screen biography of the World War I hero, written by Abem Finkel, Harry Chandler, Howard Koch, and John Huston, directed by Howard Hawks and produced by Jesse L. Lasky and Hal B.

Wallis for Warner Brothers, with Gary Cooper starred.

"**The Stars Look Down**," an adaptation by J. B. Williams of the A. J. Cronin novel, directed by Carol Reed and produced in England by I. Goldsmith with Michael Redgrave, Margaret Lockwood, and Emlyn Williams in the cast.

"**Here Comes Mr. Jordan**," a comic fantasy adapted by Sidney Buchman and Seton I. Miller from an unproduced play by Harry Segall, directed by Alexander Hall and produced by Columbia Pictures with Robert Montgomery, James Gleason, and Claude Rains in the cast.

"**Target For Tonight**," a documentary film about the R.A.F. Bomber Command, written and directed by Harry Watt, and produced in England by the Crown Film Unit for the British Ministry of Information.

"**Dumbo**," a feature-length cartoon comedy, produced by Walt Disney.

"**How Green Was My Valley**," adapted by Philip Dunne from the novel by Richard Llewellyn, directed by John Ford and produced by Twentieth Century-Fox with Donald Crisp, Walter Pidgeon, and Roddy McDowall featured.

"**One Foot in Heaven**," adapted by Casey Robinson from the biography written by Hartzell Spence, directed by Irving Rapper and produced by Warner Brothers, with Fredric March and Martha Scott starred.

OTHER OUTSTANDING PICTURES

Other commendable films of the year were "Hold Back the Dawn," "The Maltese Falcon," "Man Hunt," "Tom, Dick and Harry," "The Devil and Miss Jones," "Road to Zanzibar," "Meet John Doe," "Strawberry Blonde," "The Little Foxes," and "It Started With Eve."

CRITICS' AWARDS

As the best picture of the year, the New York Film Critics chose "Citizen Kane" in the seventh annual bestowal of awards. John Ford was adjudged the best director of the year

for his work on "How Green Was My Valley," Joan Fontaine was selected as the best actress for her performance in "Suspicion," and Gary Cooper was named the best actor for his portrayal of "Sergeant York." The critics decided not to name the outstanding foreign-language film of the year because of the limited number of such films imported, due to the war and curtailment of production abroad. As a matter of fact, there were no post-armistice French films shown in this country during the year, the few new French films shown having been made prior to June 1940.

FOREIGN FILMS

The showing of Russian films in New York and elsewhere, which had been generally abandoned for obvious reasons after 1939, was resumed during the year, and several good Soviet films, especially those of a semi-factual nature, were distributed. The import of German films, which had arrived by way of South America, was made almost prohibitive after late spring.

"CITIZEN KANE" EPISODE

A stir of excitement was caused prior to the release of "Citizen Kane" when it became known that the leading character in the picture was a large 200 newspaper-chain owner who bore more than a passing resemblance to a prominent American publisher. The tacit threat of a suit by the Hearst interests should the picture be shown caused the film's producers to hesitate nervously, but they finally went ahead with it. No dire consequences followed, except that no reviews or mention of the picture were carried in any Hearst paper in the country.

LEGION OF DECENCY PROTEST

Coincident with this contretemps, Joseph I. Breen, for several years the highly-regarded administrator of the Hays office's Production Code, resigned that position to become general manager of production at RKO. No one was formally appointed to succeed him as head of the industry's self-regulating board, and a certain

moral leniency was noted in some of the subsequent films which it passed. As a consequence, the National Legion of Decency sounded a warning note to the industry to be more watchful of the moral content of films. Finally, in November, the Legion cracked down upon Metro's production, "Two-Faced Woman," with Greta Garbo starred, and Archbishop Francis J. Spellman of New York, in an unprecedented move, issued a pastoral letter specifically "condemning" the film.

Immediately the picture was banned by local censors in Providence, R. I., and Boston, and Metro was faced with the question of defying the powerful Legion or altering the film to conform to its moral concepts. The latter course was chosen, and the Legion reclassified the film as "objectionable in part." Otherwise the industry experienced no serious censor trouble during the year.

NEW TALENT

The perpetual appetite of the screen for new talent and new faces was well satisfied in 1941 with several promising recruits. Outstanding among the newcomers was Orson Welles, whose "Citizen Kane" was his first motion picture and whose versatility was amply proved therein. Also in the cast of that picture were several notable actors making their screen debuts. Bud Abbott and Lou Costello, a team of former burlesque comics, smashed into the limelight with the first of the "service" farces, "Buck Privates," and continued their sensational rise to prominence with "In the Navy" and "Keep 'Em Flying." Other youngsters who rose to stardom during the year were Gene Tierney, Red Skelton, Laraine Day, Victor Mature, Veronica Lake, Roddy MacDowall, Carmen Miranda, Ronald Reagan, and Risé Stevens, while Shirley Temple returned to the screen after a "retirement" of 18 months during which she perceptibly grew up.

BOX-OFFICE STARS

Male stars continued to lead the list of box-office favorites, the first ten of whom—according to the an-

nual poll taken by the *Motion Picture Herald*—were, in order, Mickey Rooney, Clark Gable, Abbott and Costello, Bob Hope, Spencer Tracy, Gary Cooper, Bette Davis, James Cagney, and Judy Garland.

GOODWILL ATTEMPTS

Finally, the efforts of the industry to aid the government in its goodwill program in Latin America were not too successful. A few films, professedly designed to please our neigh-

bors to the South, were produced, and a few prominent personalities, including Walt Disney and Douglas Fairbanks Jr., made well-advertised tours of Latin America. But the films lacked the right cohesive qualities; in fact, one entitled "Argentine Nights" drew stiff protests from the Argentine Government, and the reports of returning travelers were not encouraging. Latin America remained a potential market, still to be won, at year's end.

PERIODICAL PUBLICATIONS

American Architect

572 Madison Ave., New York City.

American Cinematographer

1782 North Orange Drive, Hollywood, Calif.

American Home (The)

444 Madison Ave., New York City.

American Journal of Archaeology

Archaeological Institute of America, Columbia University, New York City.

American Magazine of Art

American Federation of Arts, Washington, D.C.

Antiques Magazine

40 East 49th Street, New York City.

Architecture

497 Fifth Ave., New York City.

Architectural Forum

15 West 48th Street, New York City.

Architectural Record

119 West 40th Street, New York City.

Art Digest

116 East 59th Street, New York City.

Art News

136 East 57th Street, New York City.

Arts and Decoration

116 East 16th Street, New York City.

Billboard (The)

1564 Broadway, New York City.

Design

20 South Third Street, Columbus, O.

Equity

45 W. 47th St., New York City.

Etude

1712 Chestnut Street, Philadelphia.

House and Garden

Greenwich, Conn.

Modern Music

113 West 57th Street, New York City.

Motion Picture Herald

Rockefeller Center, New York City.

Museum News

Smithsonian Institution, Washington, D.C.

Musical Courier

119 West 57th Street, New York City.

Musical Digest

119 West 57th Street, New York City.

Musician (The)

113 West 57th Street, New York City.

Octagon (The)

Elmira College, Elmira, New York.

Parnassus

137 East 57th Street, New York City.

Prints

1819 Broadway, New York City.

Professional Art Quarterly

18 East 48th Street, New York City.

Theatre Arts Monthly

40 East 49th Street, New York City.

Variety

154 West 46th Street, New York City.

COGNATE SOCIETIES AND RESEARCH INSTITUTIONS

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(For further information, the reader may address the following organizations)

GENERAL

ACADEMY OF MOTION PICTURE ARTS AND SCIENCES, Taft Bldg., Hollywood, Calif.
 AMERICAN ACADEMY OF ARTS AND LETTERS, 633 W. 155th St., New York City.
 AMERICAN ACADEMY OF ARTS AND SCIENCES, 28 Newbury St., Boston, Mass.
 AMERICAN ACADEMY IN ROME, 101 Park Ave., New York City.
 AMERICAN CERAMIC SOCIETY, 2525 N. High St., Columbus, Ohio.
 AMERICAN FEDERATION OF ARTS, THE, Barr Bldg., Farragut Sq., Washington, D.C.
 AMERICAN FINE ARTS SOCIETY, 215 W. 57th St., New York City.
 AMERICAN INSTITUTE OF ARCHITECTS, 115 E. 40th St., New York City.
 AMERICAN NUMISMATIC SOCIETY, 156th St. and Broadway, New York City.
 AMERICAN SCENIC AND HISTORIC PRESERVATION SOCIETY, 287 Convent Ave., New York City.
 ARCHAEOLOGICAL INSTITUTE OF AMERICA, Columbia University, New York City.
 ARCHITECTURAL LEAGUE OF NEW YORK, 115 E. 40th St., New York City.
 ARTISTS GUILD, 9 Rockefeller Plaza, New York City.
 FINE ARTS FEDERATION OF NEW YORK, 115 W. 40th St., New York City.
 GRAPHIC ARTS BOARD OF TRADE, 136 Liberty St., New York City.
 HISPANIC SOCIETY OF AMERICA, THE, 156th St., West of Broadway, New York City.
 MUNICIPAL ART SOCIETY OF NEW YORK, 119 E. 19th St., New York City.
 NATIONAL ACADEMY OF DESIGN, 175 W. 109th St., New York City.
 NATIONAL ALLIANCE OF ART & INDUSTRY, 119 E. 19th St., New York City.
 NATIONAL ASSN. OF WOMEN PAINTERS AND SCULPTORS, 42 W. 57th St., New York City.

NATIONAL INSTITUTE OF ARTS AND LETTERS, 633 W. 155th St., New York City.
 NATIONAL SCULPTURE SOCIETY, 115 E. 40th St., New York City.
 NEW YORK SOCIETY OF ARCHITECTS, 101 Park Ave., New York City.
 SOCIETY FOR AMERICAN ARCHAEOLOGY, 10 Frisbie Street, Cambridge, Mass.
 SOCIETY OF ILLUSTRATIONS, 334½ W. 24th St., New York City.
 SOCIETY OF INDEPENDENT ARTISTS, 19 Bethune St., New York City.

DRAMA

ACTORS EQUITY ASSN., 45 W. 47th St., New York City.
 ACTORS FUND OF AMERICA, 1619 Broadway, New York City.
 DRAMA LEAGUE OF NEW YORK, Hotel Woodstock, 127 W. 43d St., New York City.
 DRAMATISTS' GUILD, 6 East 39th St., New York City.
 ENGLISH FOLK DANCE SOCIETY, 155 E. 45th St., New York City.
 EPISCOPAL ACTORS GUILD, 1 E. 29th St., New York City.
 INTERNATIONAL THEATRICAL PLAY BUREAU, RCA Bldg., New York City.
 INDEPENDENT THEATRE OWNERS ASSN., Hotel Astor, New York City.
 INTERNATIONAL ALLIANCE OF THEATRICAL STAGE EMPLOYEES AND MOVING PICTURE MACHINE OPERATORS UNION, Chicago, Ill.
 LEAGUE OF NEW YORK THEATRE, 244 W. 44th St., New York City.
 MOTION PICTURE PRODUCERS AND DISTRIBUTORS OF AMERICA, INC., 28 W. 44th St., New York City.
 MOTION PICTURE PRODUCERS ASSN., Hollywood, Calif.
 MOTION PICTURE THEATRE OWNERS OF AMERICA, 1600 Broadway, New York City.
 MUSEUM OF THE CITY OF NEW YORK, Theatre Div., Fifth Ave. and 104th St., New York City.

XXVI. THE ARTS

NEW YORK PUBLIC LIBRARY, Theatre Div., Fifth Ave. and 42d St., New York City.

SCREEN ACTORS GUILD, Hollywood Boulevard, Hollywood, Calif.

THEATRE AUTHORITY, 545 Fifth Ave., New York City.

THEATRE GUILD, INC., 245 W. 52nd St., New York City.

MUSIC

AMERICAN FEDERATION OF MUSICIANS, 1450 Broadway, New York City.

AMERICAN GUILD OF MUSICAL ARTISTS, 545 Fifth Ave., New York City.

AMERICAN GUILD OF ORGANISTS, 1270 Sixth Ave., New York City.

AMERICAN SOCIETY OF COMPOSERS, AUTHORS, AND PUBLISHERS, 30 Rockefeller Plaza, New York City.

CANTORS REGISTRY, 95 St. Marks Pl., New York City.

GRAND OPERA GUILD, 250 W. 57th St., New York City.

NATIONAL BUREAU FOR THE ADVANCEMENT OF MUSIC, 45 W. 45th St., New York City.

NATIONAL MUSIC LEAGUE, 113 W. 57th St., New York City.

ORATORIO SOCIETY OF NEW YORK, 113 W. 57th St., New York City.

PHILHARMONIC SYMPHONY SOCIETY OF NEW YORK, 113 W. 57th St., New York City.

DIVISION XXVII

EDUCATION

ELEMENTARY EDUCATION

BY WILMA LESLIE GARNETT AND ERICH T. GRIEBLING
DEPARTMENT OF ENGLISH, KENT STATE UNIVERSITY

GENERAL

Many minds are intent upon evaluating the American plan for the education of the most important persons in the world today, the elementary school children of the United States. An example of the questioning attitude which is definitely challenging to the Americans is that expressed by Erika Mann in an article in *Coronet* (Sept. 1941)* entitled "I Saw America Learning." In this article, Miss Mann says that the world is looking to American educators in whose hands the future of the nation and of all democracy is held. She closes her article with this plea: "Let us teach the good . . . nor am I proposing 'political propaganda in the schools,' but a kind of *moral* instruction—clearer, more readily grasped, closer to life than the religious instruction of yesterday . . ."

Erika Mann has thus expressed forcefully the statement of what Americans are feeling strongly to be the present obligation to youth. If the young people of today may be guided aright, they can bring sane living to the world of 1950-60. What a responsibility the elementary school children of America must be prepared to assume! And a great duty has been thrust upon the American teachers of these children. If these teachers are aware of their obligation to the 1950 period, they can save this world from the destruction that seems im-

pending. The elementary pupils and their teachers are the key people of the United States.

The great teacher of Alexander the Great has an influence that is still far-reaching by reason of the power he inspired Alexander into developing. Aristotle's ideas have been carried to far corners of the world because of their strong influence upon Alexander, who was to disseminate them. The teachers of today must stretch every nerve to the end that pupils of power may effect a change to a sane world in 1960. The drive to accomplish this change seems to be coming into a place of dominant play in the administration of the public schools of America.

STATISTICAL

The total number of elementary pupils in the public and private schools of this country is now 21,550,000, and these pupils are taught by 725,000 teachers. The increasing birth rate will bring more pupils into the elementary school of the next few years. Many of these children (2,680,000) are taught in the one-teacher schools of the country, of which there were 122,000 in 1940 (*School Life*, Nov. 1940). Approximately half the total enrollment lives in rural districts or in communities of less than 2,500.

Some recent figures on the cost of public elementary and secondary education give ideas of trends in this area. As reported in the May, 1941,

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N.E.A. *Research Bulletin*, by 1940 "all but three state governments were spending *larger amounts* for elementary and secondary schools than they had been in 1930. But the expenditures for 24 state governments constituted a smaller proportion of total state expenditures at the end than at the beginning of the decade."

On the same page of the *Bulletin* is a graph reporting that, in the United States in 1938, the people spent \$2,564,418,760 on education while they spent \$7,639,529,000 on luxuries, chief of which were alcoholic beverages, tobacco, and amusements.

PHASES OF ELEMENTARY SCHOOL COSTS

For the total personnel concerned with the operating of the public elementary and secondary schools of the country (1,559,633 individuals), there is a combined salary and wage expenditure of \$1,539,670,898. This includes expenditures for boards of education, state departments of education, county administrators, instructional staff, secretaries, and auxiliary agencies for health and recreational work. Members of the instructional staff (918,715) receive \$1,262,391,621, or an average of \$1,374. As compared with the average salary for governmental clerks and stenographers who are required to have little more than high school education, their salary is small, that for the clerks averaging \$1700 annually (*School Life*, May, 1941, p. 236.)

For the key persons in charge of the program of elementary education, the average salary ranges in large to small cities of 1940-1941 were as follows: Classroom teachers, \$2,268-\$1,149; Principals, \$2,315-\$1,350; and Superintendents, \$8,605-\$3,219.

Taking the United States and summarizing the average annual salaries for members of the instructional staff in the public schools the range is from \$479 in the state paying least to \$2,322 in the state paying most, the average for all states falling at \$1,374. In villages of less than 2,500 inhabitants, teachers receive approxi-

mately \$1,000 annually; in the rural areas, the teachers in two- or more teacher schools average \$880 a year, and in one-teacher schools, \$670. (*School and Society*, Jan. 1941, pp. 120-21.)

The average operating expenditures per pupil for operating expenses in the physical plant in large cities for 1937-1938 are reported as being \$7.04 for janitors, engineers, and others; \$.38 for janitorial supplies; \$2.96 for fuel, light, and water; and \$.35 for miscellaneous items (*ibid.* p. 120).

SOURCES OF STATE SUPPORT

The sources of state support of education are these in general (they vary from state to state): general appropriation fund, 58%; permanent school fund, 3½%; dedicated taxes, 38%. The dedicated taxes include those on general property, incomes, liquor, sales, severance, occupational (*State Board Journal*, Vol. 101, pp. 42-43). Not only the state, but the National Government and the local governments are contributing to the support of the schools in the country, the village, the city. Equalization of opportunity is assured to some extent by such a three-fold source of support. Unification of educational ideals is fostered, but not dictated. The question of Federal support of education is still before the professional groups and also before legislators. Those favoring more Federal support say that equalization of educational opportunity would be provided under such a plan; those reacting in a negative way say that they fear a greater amount of Federal support would bring with it a dictatorial educational policy emanating from the Federal Government. They believe that the greater amount of control should be in the hands of the local governments if the democratic way is to make its greatest contributions. One of the important bills dealing with this question at present is known as the Educational Finance Act of 1941 (S. 1313).

The Legislative Commission of the N. E. A. is sponsoring this bill to authorize annual Federal appropriations

ELEMENTARY EDUCATION

of \$300,000,000 to the states for public elementary- and secondary-school purposes. There are special provisions in the bill to assure state and local control of schools.

Senator Elbert Thomas of Utah introduced this bill (S. 1313) for himself and the late Senator Pat Harrison of Mississippi. According to Willard E. Givens, executive secretary of the National Education Association, there are at the present time these needs which such a bill could meet: (1) equalization of elementary- and secondary-school opportunities among the states and within the states; (2) financial support of schools for Negroes in states maintaining separate schools for Negroes, made legally imperative by recent court decisions interpreting the Fourteenth Amendment to the Constitution of the United States as affecting equal rights to educational opportunities; (3) school facilities for children recently removed to the areas of defense activities and industries; (4) children of migratory workers, particularly workers engaged in seasonal occupations, largely agricultural; (5) children of Federal employees residing on Federal reservations and properties. (*Journal of the National Educators Association*, May, 1941, p. 135).

Those who oppose this type of Federal aid for schools have heretofore based their opposition on the belief that Federal grants would mean too strongly centralized Federal control. It seems that the bill S. 1313 offers a more acceptable answer to the opposition than has any other of the bills. Provision is made in the bill for continuance of state control.

AGENCIES FOR PROMOTING ELEMENTARY EDUCATION

Two types of agencies are involved in running the public elementary schools—governmental and private. Governmental agencies include national, state, county, and city units; private agencies include professional organizations in most instances. A special type of elementary education is provided for Indian children, under the direct control of the Office of

Indian Affairs. Private schools, parochial and secular, are under the direction of church and private groups, respectively. It is evident, then, that not only public money from taxes, but private money from professional groups, private money in special schools, and money spent by families sending their children to school must be counted upon to further the educational program for elementary children in this democracy.

UNITED STATES OFFICE OF EDUCATION

The U. S. Office of Education, under the leadership of Dr. John W. Studebaker, as Commissioner, and Dr. Bess Goodykoontz, as Assistant Commissioner, directs the following divisional activities bearing upon elementary education: Higher Education, American School Systems, Comparative Education, Special Problems, Statistics, Library and Library Service, and Consultant Services. There are also an Editorial Division and an Information Service. Many helpful bulletins are made available annually by the Office of Education. Among those listed in a current number of *School Life*, the magazine published by the office, are these: Educational Directory (1941); Elementary Education, Bibliography of Research Studies in Education, Studies of State Departments of Education, and State Supervisory Programs for the Education of Exceptional Children (1940); and 500 Books for Children, and Organization and Administration of School Health Work (1939). The Senior Specialist in Elementary Education, Dr. Helen K. Mackintosh, directs for the U. S. Office of Education the special lines of work in this area—elementary education.

PROFESSIONAL AGENCIES

The professional agencies organized by educators themselves include societies listed with the National Education Association and numerous others. Many of these societies convene twice yearly in sessions related to or affiliated with the National Education Association summer and

winter meetings. Some of the groups especially interested in elementary education are Art Educators, Classroom Teachers, Educational Research Association, Elementary School Principals, Directors of Health and Physical Education, Kindergarten-Primary Association, Music Educators, Directors of Rural Education, Teachers of the Social Studies, Professors in Teachers Colleges, Teachers of Speech, and Teachers of Exceptional Children. Closely related to these are the National Society for the Study of Education, John Dewey Society, Association for Childhood Education, American Council on Education, Curriculum Society, Parent-Teacher Association, and Progressive Education Society. The names of these organizations are indicative of the special lines of interest in elementary education.

In most cases, these organizations sponsor the publication of yearbooks, magazines, or bulletins. Some of the yearbooks of 1940-1941 are *Art in American Life and Education*, Fortieth Yearbook (National Society for the Study of Education); *Educational Freedom and Democracy*, Second Yearbook (John Dewey Society); *Education for Family Life*, Nineteenth Yearbook (American Association for School Administrators); *Meeting the Special Needs of the Individual Child*, Nineteenth Yearbook (Elementary Principals); and *Mental Health in the Classroom*, Thirteenth Yearbook (Department of Supervisors and Directors of Instruction).

The American Educational Research Association has published recently: *Review of Educational Research*, *Education of Exceptional Children of Minority Groups*, and *Our First Twenty-five Years*.

The total NEA membership reported in May, 1941, was 211,191; the total membership in state educational organizations was 802,481. The total number of teachers eligible to the NEA was 937,258. (*Journal of the National Education Association*, Sept. 1941, p. 182).

The main issues before the two

national conventions of the NEA in 1941 are suggested by the following topics for several of the meetings at Boston and Atlantic City: Our Country's Training Program (John W. Studebaker), The Nation's Responsibility for Education (Lester Hill), Problems in Healthful Living (Dr. Haven Emerson), Opposing Viewpoints on Foreign Policy (Senators Gerald P. Nye and Claude Pepper), Education to Provide for the Common Defense (President James B. Conant, Harvard), Developing an Effective Health Program, Opportunities for the Rural Child, Education for Family Life, Special Education in the Care of Handicapped Children, Selection of Textbooks, Education for Leisure Time, School Libraries, and Our Relations with South American Countries.

SCHOOL BUILDINGS AND EQUIPMENT

The elementary school of 1940-1941 was carried on in all kinds of school buildings from the little one-room school-house to the latest of models in well-designed modernistic building. The latest designs, those completed in 1941 for some of the best school systems, are to be found pictured in numbers of *The School Board Journal*. Of the striking features of the new buildings and their equipment, these may be noted as indicating excellent trends for the future: modernistic simplicity of exterior and interior designing, the outside being built for and about school needs; durable materials; light from two sides in all classrooms; low ceilings; quiet colors as backgrounds; recessed lighting fixtures giving shadowless illumination; body-contour chairs and well-designed tables; ventilators; story and library corners in all grade classrooms; outdoor classrooms; provision for science rooms, music rooms, art rooms, libraries, as well as for auditoriums and gymnasiums. There are beautiful grounds, including playgrounds about the schools.

In certain of the opportunity schools, these provisions may be men-

tioned as designators of a few types of work being done: pools for therapy; physio-therapy rooms equipped with machines needed for crippled cases; pet rooms; roof gardens; sight-saving rooms; and rooms for testing cases.

CURRICULUM

The curriculum of the regular elementary school has in it the same subjects as those included for the past ten years. More attention is, however, being given to the language arts, music, health, and science than has ever been given. Individualization of instruction is at last accepted in leading schools as being the most desirable method of teaching new techniques, especially those needed in the language arts field. Some strides have been taken in advancing the interest already aroused in the education of gifted children. More was done in 1941 than in years past to further the education for all exceptional children, handicapped as well as gifted.

It seems that there is still some lack of understanding in regard to the degree of progressive education acceptable in schools. More freedom is being advocated by certain of the leaders, while more guidance is being urged by others. Dr. Mary Ellen Chase, of Smith College, has written in favor of more guidance and discipline for the child (*The New York Times Magazine*, Feb. 9, 1941, pp. 11, 27).

One of the most encouraging signs in the new program is that of the greater use of the library which is being given a more and more important place in the elementary school. In 1941 the library services were enlarged in many rural areas and in many city regions. The co-operation given by the American Library Association and the librarians is making this development possible. Some of the effective teachers of reading are becoming recognized as the librarians who have read and told stories to children in the past year.

A valuable summary of work done

in the curriculum field, may be found in the October 1941 *Curriculum Journal*. The annual list of outstanding curriculum materials is included in that volume as organized by H. B. Bruner and M. C. Wieting.

A study of the titles of articles bearing on elementary education for the past year calls attention to these topics as foci of interest for 1940-1941: health education; education of exceptional children, including gifted and handicapped; democratic living; democracy in the elementary school; citizenship; American creeds; libraries; individualization of instruction; remedial programs in reading; visual instruction; school furniture; lighting; safety education; religious education; nursery schools; national examinations for teachers; laboratory schools as leaders in curriculum development; internships in the preparation of teachers; the eyes and reading; aid for rural schools; vocabulary difficulties; report cards for evaluating the progress of the whole child; scales for rating in various subjects; school equipment and supplies; a remedial reading specialist in every school; reality in the language program; spelling lessons and ability to spell; remedial arithmetic; interrelation of speech and reading; educational research in science; education of teachers.

In addition to magazine articles many dissertations are, of course, being published annually at the universities for graduate study in elementary education.

The researchers seem to be dealing with immediate problems of elementary education bearing on personnel (child, parent, and teacher), subject matter, techniques of teaching, evaluation of results, school environment (including buildings and equipment), and school law. These students reflect a scientific interest in the mental and physical health of the child, in mental and physical growth, and in the child's power to meet life problems socially, that is with fellow-beings. Such topics as the following were appearing in thesis and dissertation topics of the year: provisions

for superior and backward children; education of crippled children; homogeneous or heterogeneous grouping— which?; sight conservation; nutrition in the elementary school; science education for elementary children; trends in attendance; visual perception in relation to reading and spelling; analysis of speech defects; speech training in relation to reading; units of work in all basic and in all supplementary subjects; diagnostic studies upon which remedial instruction may be based in all fundamental courses; radio in schools; evaluation of mental and achievement tests; children's interests in various subjects, especially books; teacher-education programs.

The writings and studies indicate the basic interests of the elementary school. Attempts are being made to teach that of social value, in the most economical way, and with some assurance that the teaching has been successful for the individuals concerned. Less attention is being given to mass instruction than for many years; more, to individualization.

REQUIREMENTS FOR TEACHERS

There has been a steady rise in minimum requirements for the certification of elementary teachers in the last decade. In all but a few of the states the issuance of certificates is under the complete control of the states. In several states, colleges or universities are allowed to grant certificates. By May, 1940, most states were requiring for the lowest grade regular elementary certificate from one to four years of college training. The states requiring four years are Arizona, California, Connecticut, Delaware, Indiana, Louisiana, North Carolina, Pennsylvania, Rhode Island, and District of Columbia; those requiring three years are Colorado, Maryland, New Hampshire, New Jersey, New York, Ohio, Utah, Washington. In about 18 states certificates are still issued upon the basis of examinations. Reciprocity certificates are granted between some states (*School Life*, Oct. 1940, pp. 27-29).

It is clear from the foregoing that colleges and universities have impor-

tant work to do in directing the elementary school programs. In these institutions, the undergraduate work includes both liberal arts and professional education. The latter usually includes practice teaching or interne work in schools for children. On the graduate level there are opportunities for specialization. The newest, while still the oldest, line of development in teacher education for the elementary level is that in language arts (English), now coming to a position of first place as representing basic education.

With better education for teachers in the elementary school, there have come demands from these more mature teachers for tenure, better salaries, and normal living conditions. Some progress has been made in providing for all of these demands.

The educational requirements for teachers are being advanced every year. The year 1941 witnessed certain advancements of standards. The state departments of education are cooperating to bring about higher requirements in certification as already indicated. The American Association of Teachers Colleges and the Commission on Teacher Education of the American Council on Education have advanced many of the studies made in teacher education.

In the summer of 1941, workshops relating to the Commission's program were scheduled at the following places: University of Chicago (for child development), Claremont College, George Peabody College for Teachers, University of Michigan (for statewide study), Northwestern University, Stanford University, Syracuse University (for statewide study); Denver, Des Moines, Greenville, S. C., Houston, Los Angeles, Philadelphia, and Spokane.

During the year, there seemed to be evidence that more graduate study will be required of the elementary teacher of the future than has been thought possible up to the last ten years. Colleges of education in the great universities are giving much attention to the education of the elementary teacher. Especially interest-

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ing are the new developments in educating the elementary teacher as a specialist in the language arts field.

PROFESSIONAL BOOKS

The following books having bearing upon elementary education were included in the April, 1941 list from the National Education Association:

Dewey, John. *Education Today*; ed. by Joseph Ratner. Putnam, 373 pp.

Gesell, Arnold and others. *The First Five Years of Life: A Guide to the Study of the Preschool Child*; Yale Clinic of Child Development. Harper, 393 pp.

Bode, B. H. *How We Learn*. Heath, 308 pp.

White House Conference on Children in a Democracy. Superintendent of Documents, 86 pp.

John Dewey Society. *Teachers for Democracy*, Fourth Yearbook, ed. by G. E. Axtelle and W. W. Wattenberg. Appleton-Century, 412 pp.

Morrison, H. C. *The Curriculum of the Common School From the Beginning of the Primary School to the End of the Junior College*. University of Chicago Press, 681 pp.

Lee, J. M. and Lee, D. M. *The Child and His Curriculum*. Appleton-Century, 652 pp.

American Council on Education. *Reading in General Education: An Exploratory Study*, ed. by W. S. Gray. The Council, 464 pp.

National Education Association. Educational Policies Commission. *Learning the Ways of Democracy: A Case Book of Civic Education*. The Commission, 486 pp.

Heck, A. O. *The Education of Exceptional Children: Its Challenge to Teachers, Parents, and Laymen*. McGraw, 536 pp.

In addition to the general publications, excellent textbooks in reading, language, spelling, science, and social studies, especially, were published this year. The general public, as well as professional educators, should know that the best publishing houses have leaders from the professional and subject-matter fields as authors and editors of the textbooks they sponsor. Probably the textbooks and the sup-

plementary reading books for children are most important as materials of instruction used in the schools.

PROFESSIONAL MAGAZINES

Magazines especially devoted to elementary education, those used as background sources for information given in the present review, are *Educational Administration and Supervision*, *Elementary School Journal*, *Elementary English Review*, *Educational Method*, *Journal of the Association for Childhood Education*, *Journal of the Curriculum Society*, *Journal of the National Education Association*, *School Board Journal*, *School Life*. (U. S. Office of Education), and *School and Society*. Bulletins from the U. S. Office of Education, National Education Association, and American Educational Research Association supplemented the foregoing sources.

SUMMARY

Better curricula, better management, and better teachers, all at little or no increase in cost to the taxpayer is the promise for elementary education as implied in the reports of 54 superintendents of departments of education in states, territories, and possessions. An analysis of reports as they appear in such publications as the *Journal of the National Education Association* and *School Life* shows plainly that educators are emphasizing studies of curricula, teacher preparation, and special pupil aids. Physical equipment, on the other hand, appears to elicit attention only when it can no longer be neglected. Thus the outlook is bright for pupil, teacher, and taxpayer, if not for contractor and salesman.

National defense is reflected in the elementary school activities of the Philippine Islands, where 45,000 teachers teach 2,000,000 pupils. These teachers are emphasizing food production as a phase of national defense. Military training for all boys over 10 is being instituted.

Iowa has appointed a committee to build a new elementary course of study. Tri-county demonstration centers for inservice training have

reached over 22,000 teachers. A step in advance has been taken in the development of a two-way electrical teaching device which brings classroom instruction and discussion to shut-in pupils. Standards have been raised for beginning superintendents.

In Kentucky, all school facilities and resources are being utilized in the national defense program. A million dollars have been appropriated for the teacher-retirement system. Kentuckians have voted that schools may be aided on an other than a per capita basis.

Child health is getting added attention in New Jersey, where a more comprehensive physical examination for all pupils has been developed. Here physical examinations are required of all state employees every three years. Local boards of education are authorized to require diphtheria immunization. Employment certificates are being refused to children under 16.

Puerto Rico reports that English

and Spanish are being placed on an equal footing in the elementary schools. The elementary school program is being enriched, particularly through vocational training.

The success of the Texas School of the Air has been accomplished through close cooperation of educational agencies with the state department of education. The program built around the five-core-area curriculum of the state has been presented five times weekly to more than 150,000 children in their classrooms. (From *NEA Journal*.)

School boards of Virginia have been authorized to operate summer camps, and the state board of education has appointed a superintendent of audio-visual education. Impetus has been given to salary equalization between white and negro teachers. The compulsory attendance law has been strengthened, and the 1940 session of the general assembly increased the state appropriation from \$500 to \$610 per teaching unit.

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WAR PROBLEMS OF SECONDARY EDUCATION

The most critical problems for secondary education in 1941 were those concerned with a world at war. The more significant of these problems are considered as follows: Agitation and Unrest, Battle of the Textbooks, Controversy Over the CCC and NYA, Education for Work, Educating for Pan-Americanism, Implementing Defense.

AGITATION AND UNREST

Throughout the year, the war and its attendant problems brought agitation and unrest to the far-flung fronts of secondary education. Such matters as academic freedom, teachers' unions, student unions, subversive teaching, and dangerous textbooks were the

subjects of constant controversy. The following volleys are symptomatic of the unrest and uncertainty in the realm of secondary education:

George F. Zook, president, American Council on Education, *School and Society*: "The world is in chaos. The social institutions of half the world—churches, libraries, museums, schools, colleges, hospitals—are being literally blown to pieces; industrial production is aimed largely at war; expenditures for armaments are daily mounting by millions of dollars."

Mary Reynolds Fisher, *Occupations Magazine*: "Vocational counselors and teachers of classes studying occupations are inclined to neglect the existence of labor unions. This live topic is a subject of class discussions in courses in Fleisher Vocational School,

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Philadelphia. Students learn about trade unionism and what it stands for, labor laws, the Social Security Act, and similar subjects with which every future worker should be familiar."

C. Currien Smith, New York State College for Teachers, *School and Society*: "Whatever the platform of the American Federation of Teachers may be, the fact still remains that its cause is linked to the cause of a particular group. Obviously it is not a province of public education to promote the cause of a particular group, whatever the group may be, if either the preconceived objectives of the group or the methods used by the group are antagonistic to the philosophy, objectives, or methods of public education."

INVESTIGATION OF NEW YORK'S SCHOOLS AND COLLEGES

The most virulent controversy in secondary education in 1941 was concerned with the Rapp-Coudert Investigation of New York City's schools and colleges. This committee was appointed by the state legislature to study the problem of state aid and subversive activities in New York City schools. Most educators consider it unfortunate that these two functions should have been assigned to the same committee. But it has been the investigation of subversive activities that has had volcanic reverberations. Approximately 50 teachers in the city colleges have been suspended as a result of the investigation; several have been dismissed. One teacher has been convicted of perjury by a court and sentenced to prison. The investigation has produced a furor of public opinion. The following represent typical statements on opposing sides of the controversy.

Senator Frederick R. Coudert, Jr., chairman, Legislative Committee on Subversive Activities: "It is going to require brutal treatment to handle these teachers who have been for so long doing precisely what they are told, imbuing students with their communistic and Nazi policies and sitting for years on the payroll of

New York State while they were about it."

Dean Ned H. Dearborn, General Education Division, New York University, and chairman, Committee to Defend Democracy and Intellectual Freedom: "That the Coudert inquiry has ignored the most basic principles of democracy is abundantly clear. For over a year the New York City schools and colleges have been greatly disturbed, their teachers and students deeply concerned about their freedom to discuss frankly the issues of the day. The activities of teachers and students have been subjected to secret and undemocratic inquiry. They have been turned against each other."

BATTLE OF THE TEXTBOOKS

The year 1941 witnessed many battles on land, in the air, and on the sea. Not the least of these was the "Battle of the Textbooks" waged in the minds and hearts of men. The enterprise known as the "Rugg Books" originated 21 years ago. Prof. Harold Rugg, Teachers College, Columbia University, originally developed 12 Social Science Pamphlets for use in secondary schools. These pamphlets were used experimentally in approximately 375 schools for a period of seven years. From 1928 to 1931 these pamphlets were made into the 14-volume series known as *Man and His Changing Society*.

Previous to the great "Battle of the Textbooks" in 1941, the Rugg books appear to have flourished almost unscathed. Professor Rugg himself describes this period as follows: "In the ten years from the publication of the first volume of *Man and His Changing Society* until the summer of 1938 there was never any fear that I was 'advocating communism,' preaching the socializing of all property. On the contrary, parents liked the conception of the 'American Way of Progress' which I had built up carefully in the books."

Such peace was only a prelude to the great "Battle of the Textbooks" in 1941 when *blitzkriegs* were launched on many fronts and with powerful forces against the Rugg books. In

these attacks the books were denounced as subversive and un-American. It was held that they were designed to undermine patriotism and to twit the founding fathers. The books were condemned for an alien ideology and for a plan to substitute a "new social order" for the American Government. It was claimed that the books advocated the abolition of private property and debunked the great heroes of the past.

A few milestones chart the main course of this epochal "Battle of the Textbooks." Albert T. Falk, director, Bureau of Research and Educational Advertising of America, maintained that Rugg's *An Introduction to Problems of American Culture* presented "an untrue picture of advertising." A pamphleteer attack against the volume was launched. Soon the New York State Economic Council, the Hearst newspapers, and the National Association of Manufacturers entered the fray with Mervin K. Hart, B. C. Forbes, and George E. Sokolsky, respectively, as field generals. Hart drove a spearhead into the secondary schools of Binghamton, N. Y. Despite the courageous defensive of the superintendent of schools and the parent-teacher council, the Rugg books were dislodged from the library shelves. Mr. Forbes, a member of the board of education with permanent headquarters in Englewood, N. J., employed the strategy of the "Trojan horse." Through an energetic defense by board members, parents, and teachers the Rugg books were sustained.

In this campaign the intelligence service was particularly active. Careful examinations of the Rugg volumes were conducted. Mr. Sokolsky proceeded somewhat more cautiously. He launched a trial balloon through the *Liberty Magazine*. In his article he revealed to parents that their children were exposed to a secret poison gas known as "social studies." Rugg was the chief dispenser of the new gas. The Sokolsky balloon seemed to indicate that the softening-up process had been effective, that the zero hour had arrived for an all-out offensive.

O. K. Armstrong chose to direct this offensive. He published an article in the *American Legion Magazine* entitled, "Treason in the Textbooks." In this article he condemned the fusion of the social studies. He insisted that "these courses form a complete pattern of propaganda for a change in our political, economic, and social order." Armstrong not only blacklisted the Rugg books but *Scholastic Magazine* and some other publications. Rugg reports that within two weeks of the publication of Armstrong's article, *Scholastic Magazine* (of which Rugg is a contributing editor) received 16,000 cancellations.

In the meantime, the National Association of Manufacturers decided that it should develop an arsenal of ideas for coping with the textbook controversy. It employed Prof. Ralph W. Roby of Columbia University to abstract 600 social science textbooks. Professor Roby abstracted exact passages from these volumes. For a time the attack was shifted from the Rugg books to the NAM investigation. Various reactions to the Rugg books are reflected in the following statements:

John Dewey, Professor Emeritus, Teachers College, Columbia University: "In the only true sense of the word the works of such men are not subversive; they are on the contrary conducive to unfettered thinking, as opposed to unthinking stereotypes that leave no way out of our dilemmas but resort to violence and arms."

Mervin K. Hart, New York State Economic Council: "Dr. Dewey says these books are conducive to unfettered thinking. I think this is untrue. They are, I think, part of the program Professor Rugg advocates—namely to 'create swiftly a compact body of minority opinion for the scientific reconstruction of our social order.' As such, they have no place in American schools."

Samuel Engle Burr, Superintendent of Schools, Rye Neck, N. Y.: "I do not consider the Rugg books to be 'subversive.' My criticism is that they fail to present a 'positive' program for the American way of life. There

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is a good deal in the books that is negative. It is my deliberate opinion that in this period of crisis we should positively indoctrinate our pupils in democracy and the American way of life."

CCC AND NYA CONTROVERSY

Secondary education in 1941 encountered the impact of tremendous forces. These forces were literally unknown a decade ago, did not even exist in the vocabulary of the educator. A most harassing problem in this turbulent year was the controversy over the CCC (Civilian Conservation Camps) and the NYA (National Youth Administration), the problem of dual control of education. The CCC and NYA were children of the great depression, creations of the New Deal. They were established as temporary public works agencies to provide useful employment for young people who could not otherwise find work. But these brain children of the depression soon grew into powerful prodigies. Student-aid in 1941 was distributed to 28,000 secondary schools and 1,700 colleges. Vocational work had been stimulated in the public schools through Federal aid. Independent work experience schools had been established in competition with public schools in many communities. Also, more than 600 "resident boarding schools" had been established in 47 states. One young man in every seven of proper age limits had been served by the CCC. Of the 2,420,000 youth enrollees, 90 per cent had participated in the educational activities of the camps.

In 1935 the educational adviser of the CCC camp did most of the teaching himself. In 1941, as dean of a faculty, he directs a detailed educational program. This faculty may include technical and administrative personnel, college-level enrollees, local school teachers, WPA and NYA instructors, and volunteers from the community. The CCC and the NYA, born in weakness and innocence, had grown Minerva-like into potential giants. The problems created thereby were legion.

In the year 1941 educational leaders awoke to the peril of the situation. The American democracy had been founded, and the public school had been nurtured in the philosophy of local initiative, "keeping the schools close to the people." Roughly there were 127,000 school districts and 424,000 school board members. And yet in 1941 educators faced the dilemma of a "system of schools parallel to the public schools of the country." The old double-headed monster of Federal support and Federal control had appeared, and was on the march. Does Federal support mean Federal control? Does control inevitably follow the dollar? If two parallel systems of schools, must the local community compete with the Federal Government? Will education become a pawn of politics? What will happen to academic freedom? These questions were all related to one basic issue—What should be the relation of the Federal Government to education as illustrated by the CCC and the NYA? In 1941 this subject provoked incessant controversy among numerous educational groups. The Educational Policies Commission, policy-making body of the National Education Association, in a formal report issued Oct. 8, 1941, recommended the discontinuance as separate agencies of the CCC and NYA. Influenced no doubt by such pressures and agitation, President Roosevelt on Oct. 27 recommended a merger of the CCC and NYA and the placing of the two agencies in the Federal Security Administration.

EDUCATION FOR WORK

The frontier and outstanding idea for secondary education in 1941 was "Education for Work." The germ of the new orientation was planted near the close of the year 1940. A special committee of the American Youth Commission issued a report entitled, *What the High Schools Ought to Teach*. The members of the committee were highly competent and the prestige of the committee very great. The committee issued the following pronouncement: "Young people need

to learn to work. Labor is the lot of man and it has not been recognized as it should have been in arranging institutional education. Work can be advocated as a much to-be-desired phase of education for all classes of young people. The payment of wages to young people for the labor which they perform—payment made possible by federal appropriations—contributes to economic adjustment. Wages are a means additional to schooling of inducting young people into adulthood."

The prestige of this committee and the timeliness of the recommendations influenced every phase of American secondary education. Other tributaries, however, have contributed to this main stream of influence. The CCC and the NYA had already provided for thousands of young people opportunities for actual work experience. Again, the national defense program created an intensified interest in vocational education. The so-called white-collar jobs temporarily lost caste. Finally, a major tributary to the work orientation program has been the "Occupational Adjustment Study" conducted by the National Association of Secondary School Principals. This study has involved secondary schools in all sections of the United States. The study has been directed by Dr. Edward S. Landy and partially subsidized by the General Education Board. The plan involves the use of four instruments as follows:

1. The follow-up record card
2. The post-school inventory (a questionnaire sent to all youth one, three, and five years after they leave school)
3. The follow-up interview schedule (used with a selective sampling of the school leavers)
4. The employer interview schedule (also used with a selected sample of the employers of the youth interviewed)

The pronouncement of the American Youth Commission on "Education for Work" has profoundly modified secondary education. Some schools

have reorganized with the vocational or work objective paramount. Nearly all schools have endeavored to make their programs more realistic. In some schools the "Education for Work" concept is unsavory and distasteful. It smacks of European work camps and totalitarian regimentation. The Modern Language Association of America, through its executive council, rejected the report of the American Youth Commission. The MLAA protested that only teachers of education and administrators were on the committee. It rejected the implication that the humanities should not have a major role in the education of youth.

The year 1941 witnessed many sincere efforts to implement the recommendations of the American Youth Commission on "Education for Work." At Sedan, Kan., the entire high school has been remodeled and renovated by use of in-school and out-of-school NYA workers. A modern firehouse, a lighting system for night football, and bleachers were constructed. In Clayton, N. M., NYA youth accepted as a project the furnishing of the entire high school. The boys made 250 straight chairs, 350 arm chairs, and 20 large tables. The girls made tablecloths, bedspreads, and a large curtain with old Spanish embroidery. Also, the girls made pillows for the stadium bleachers, gymnasium suits for the physical education classes, 74 uniforms for the band, and 90 uniforms for the "pep" squad. To provide dinner service for 300 persons in the home economics department, a pottery project produced hundreds of dishes from native clay. In the high school at DeForest, Wis., which is located in a rich dairy section, two NYA boys did milk testing in the community for 11 herd of 160 cows.

EDUCATING FOR PAN-AMERICANISM

The year 1941 witnessed a tremendous re-awakening of interest in South America. As the outlines of the war emerged, the National Administration in Washington construed the

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Monroe Doctrine to embrace the Western Hemisphere. In implementing this policy, President Roosevelt declared: "This means all for one, and one for all." To be effective such a policy must mean closer military, economic, and cultural collaboration. In administering such a program, it was axiomatic that the nation should turn to the secondary schools.

Dr. John W. Studebaker, U.S. Commissioner of Education, announced during the year the establishment of a program for "the further development and understanding and appreciation of the other American republics." The program comprehended five general divisions:

1. Studies and reports dealing with school practices and school materials related to inter-American studies.
2. Promotion of exchange of educational materials with Latin America.
3. Preparation of teaching aids.
4. Promotion and facilitation of professor, teacher, and student exchange.
5. Studies of educational programs in other American republics.

For the last three years the Department of Secondary School Teachers of the National Education Association has sponsored a committee on inter-American relations, with the following announced objectives:

1. To stimulate the introduction of courses on Latin-America including languages, history, music, art, and inter-American relations.
2. To stimulate the coordination of Pan-American clubs into a national youth movement for inter-American solidarity.
3. To provide a national clearing-house for the exchange of teaching materials.
4. To act as a liaison between the government's cultural and educational agencies, and the high school teachers.
5. To build closer relations between the secondary schools, teachers, and students of this country and those of Latin America.

When the American secondary school embarked on the "Good Neighbor Policy," it confronted serious obstacles. Certain objective facts bulked large. First, the secondary school had not been accustomed to look to South America for culture. Its attention had always been directed toward Europe. American children knew almost nothing about South American literature, art, and music. They knew only a little more about South American history. Few could identify Simon Bolivar, Pizarro, or San Martin. Second, North Americans "felt superior" to South Americans. There was a general impression that South Americans had emerged only slightly from barbarism. Their culture was that of the *sombrero*, the guitar, and the cocktail. Even the 1941 cinema productions—"Down Argentine Way" and "Argentine Nights"—convey this same impression of South American culture. Third, the first World War had left in its wake an ill-fated collapse of Pan-American upsurge. This result had been due to lack of educational implementation. The failure, however, had left open wounds and sensitive feelings. South Americans believed that North Americans did not really care much about them. Fourth, South Americans viewed with skepticism the possibility of our imperialistic designs. Fifth, a considerable part of the South American population was definitely pro-Axis in sympathy. Confronted with these handicaps, secondary educators recognized that, to implement the "Good Neighbor Policy," they themselves must undergo a change of heart. They must cast off the cloak of Philistinism and Pharisaism. They must kneel at the "hemisphere" culture board, ready to receive as well as to give.

The close of 1941 found secondary schools turning to the civilization of South America in ever-increasing degree. Statistics reflect that Spanish is supplanting French as a foreign language. The new emphasis in geography is reflected by Prof. W. R. McConnell, Miami University: "What is the relation of the oil fields of Venezuela to the defense of the

Western Hemisphere? What bearing does the tin found in Bolivia and the rubber grown in Brazil have on our policy in Southeastern Asia? What relation have the vanadium mines of Peru to our effectiveness as an 'arsenal for democracy'? How does the price of beef in the Argentine affect the lives of the people on our plains? What role do the miners in Chile play in the lives of the workers in the refineries in New Jersey? Surely a more tolerant and understanding citizenry would inevitably result from a deeper knowledge of such common problems as these."

In New York City, more than 75 Pan-American clubs with an enrollment of 2,000 students have been organized. New clubs are being formed daily. Hundreds of students are anxious to learn more about the Latin-American lands. Special classes on an extra-curricular basis have been formed in Spanish and Portuguese. As part of an enrichment program, the pupils of Public School 96, Queens, New York City are taught conversational Spanish and Spanish culture. At James Monroe High School, a social studies syllabus integrates Latin-American culture with every class. The Board of Education in New York City has officially made Pan-Americanism a part of the work of the school system.

IMPLEMENTING DEFENSE

The major task of secondary education in 1941 was that of girding for total defense. In the general orientation of the secondary school's program for defense, national agencies provided helpful leadership. The National Education Association pledged its support of the defense program through the following resolutions: (1) Wholehearted approval is given to the policy of the United States Government in furnishing to those nations which are now resisting the ruthless aggressions of totalitarian nations, the fullest material assistance consistent with our own safety. (2) The schools should continue the full use of their facilities to meet defense train-

ing needs, needs to which they have already promptly responded.

Commissioner Studebaker recommended the following emphases for the schools during the year 1941-42: "Public and private schools may be expected to adapt their programs in 1941-42 to stress health and physical education, citizenship training, community, national, and international relations, with particular emphasis upon hemispheric solidarity. Schools this year will emphasize conservation of national resources more than ever before. They will explain in more detail the differences between dictatorships and democracies. Educational radio programs and forums will help to identify and endeavor to solve through public enlightenment and discussion major problems affecting our citizens in this defense period. Defense savings programs also will be initiated."

Every secondary school principal has confronted the challenge, "How can my school enhance the program for democracy and total defense?" In general there have been three answers to this question: (1) School as usual; (2) Shoulder arms; (3) A broad, dynamic defense program. An adherent of the "school as usual" theory holds that education itself is the nation's best defense. The schools should be free of the army. The greatest danger is internal rather than external. The advocate of the "shoulder arms" theory holds that we should take not only a few pages from the dictator's book, but the whole volume. The secondary school should become an armed camp. High schools should have cadet training. As prescribed in *Mein Kampf*, emphasis should be given to a Spartan type of education. In any school there should be a concrete and definite program, for in a real sense the fate of modern education, in fact all public education, hangs in the balance. The proponent of "a broad, dynamic defense program" maintains that a host of essential activities must precede and accompany the training of the soldier, the sailor, and the aviator. Such a theory holds that the strongest army

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in the world is ineffective if men are no longer inspired. A Maginot Line is futile if the nation is rent with hatred and disunion.

The principal who conceives the program of democracy and total defense in a broad, dynamic way recognizes the complexity of the problem. First of all, he and his staff seek to clarify the meaning of democracy. Prof. Thomas H. Briggs in an excellent article, "The Ramparts We Defend," says: "Democracy cannot be left to shift for itself. Unless it is continually clarified, unless there is developed in it an impelling faith, unless it is seen to be directive of action in all phases of modern life—social, political, religious, industrial and economic—it will degenerate and die. A defeat in arms will be meaningless and insignificant if we have already defeated democracy by neglect."

Such a principal recognizes that a broad program for democracy and total defense is basically a problem of morale. He wants his pupils to be cheerful and happy. He wants them to like school. He wants them to believe that some things are worth living for and dying for. Such a principal recognizes the importance of physical education in a defense program. But physical education is conceived in its broad implications. Prof. Jay B. Nash, New York University, says: "An adequate program of health and physical education is absolutely basic; no program of military drill in public schools will meet this problem. Military defense is important, but national defense is more than military defense."

Such a principal will place strong emphasis on vocational education. He will recognize that today wars are fought as much in factories and in schools as they are in the field. Modern armies depend on machines that are intricate and specialized, requiring intricate skill for their construction and maintenance. New York City alone, in its emergency defense program, has trained more than 50,000 men for war industries. More than 50 different courses have been offered in

all the various centers. Twenty-three day and seven all-night schools are utilized. In the vocational department of the city schools there is an all-high registration of 62,623 boys and girls, an increase of 15 per cent in 12 months.

Such a principal promotes a program of democracy and total defense throughout the entire school system and in all courses. The New York City high schools afford a splendid illustration. Superintendent Harold G. Campbell has said: "No neutrality as between dictatorship and democracy will be countenanced here. The schools will become one of the chief propagandist agencies in instilling in the minds of the children just exactly what democracy means. Every subject taught in the classroom, whether it be social studies, arithmetic, English, or art, will be 'tilted' toward the democratic approach."

In the social studies a revised course of study in modern history is introduced. It is designed to emphasize democratic principles and the threat of totalitarianism. The course is built around seven fundamental trends in the world's history: the overthrow of absolutism and the emergence of democracy, the struggle between reaction and liberalism, the shift from an economy of relative scarcity to an economy of potential plenty, emergence of national states and the extension of European culture, increasing interdependence of the nations of the world, threat of totalitarianism and the quest for peace and disarmament. M. M. Mandl, Evander Childs' High School, implements the democratic concept through his courses in biological science. He says: "Biology gives ample proof that the brains of the world are not restricted to any one nation. In current topics, in the study of bacteriology, in genetics, in the cell theory, scientists who contribute to these fields are found to be widely distributed according to nationality, and are not restricted to any one race or color. Thus the idea of a superior race of human beings is clearly disproved."

In vocational classes, teachers em-

phasize what may be put to immediate use in defense industries. Overflowing Spanish classes vibrate with South American culture. Home economics classes contribute school-made articles to "Bundles-for-Britain." Emergency defense courses operate on a 24-hour basis. Such elements as keeping fit, mental hygiene, and first-

aid are emphasized in the health and physical education program. Probably all departments in the high schools participate in the presentation of an historical pageant, entitled, "The Road to Freedom." In 1941, most secondary schools sought to develop a broad, dynamic program for democracy and total defense.

HIGHER EDUCATION

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COLLEGE AND UNIVERSITY ENROLMENTS

For the first time in 20 years college and university enrolments registered a sharp decline in 1941. Indeed, nothing comparable to the present decline has occurred since 1917-1918. The facts and figures presented here are based on the study of college and university enrolments made each year by President Raymond Walters of the University of Cincinnati and reported fully in *School and Society*. The decreased enrolments are to be accounted for largely by the operations of the Selective Service Act and the attraction of defense jobs.

All geographical divisions of the country have smaller enrolments, ranging from a decrease of 2.07 per cent in the South Atlantic division to a decrease of 8.97 per cent in the West North Central division. Only three states showed total increases—Connecticut, with an increase of 3.19 per cent, Maryland, 5.19 per cent, and South Carolina, 1.85 per cent. A factor in the increases in these states was larger registration in the U.S. Coast Guard Academy at New London, Conn., the U.S. Naval Academy at Annapolis, Md., and the Citadel Military College at Charleston, S.C.

Attendance losses were heaviest in 57 universities under public control,

in which the full-time enrolments of 259,336 were 16.17 per cent lower than in 1940. The second heaviest losses were recorded in 77 independent teachers colleges in which the 65,533 students were 15.35 per cent fewer than in 1940. Next come 52 universities under private control, where the full-time enrolment of 176,240 was 5.90 per cent lower than in 1940. The 429 independent colleges of arts and science, with 239,998 students in full-time enrolment, showed a decline of only 3.62 per cent below that of 1940. Small gains were reported in 138 of these institutions. Because of deferment from military duty of engineering and certain scientific students under Selective Service regulations, 54 independent technological institutions showed a decrease of only 2.57 per cent. The returns disclose that enrolments have been maintained or increased in the fields in which young men have been deferred from military service: engineering, medicine, dentistry, and certain sciences, and also in nursing and certain other courses for young women. There were particularly heavy attendance losses in the university graduate schools of arts and sciences, in law schools, and in teachers colleges and departments of education.

Enrolment figures for freshmen have a certain special significance, since first year students were not affected by Selective Service regulations. The 654 institutions reporting

*The writer is indebted to the following publications for material assistance in this report: *School and Society*, *Journal of Higher Education*, and *Junior College Journal*.

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these figures reported a total of 230,523 freshmen, a decrease of 4.53 per cent as compared with 1940. The 51 universities under private control, included in this report, registered 22,533 arts and science freshmen, or .08 per cent more than in 1940. For 422 independent colleges of arts and sciences, with 73,461 freshmen enrolled, there was a decrease of 4.5 per cent. In 53 public universities, registering 33,338 freshmen, the decrease was 6.1 per cent. In the institutions reporting, there was an enrolment of 34,857 freshmen starting engineering courses, an increase of 8.7 per cent over 1940. Enrolment in commerce, or business administration courses, amounted to 20,852 freshmen, only 2.7 per cent fewer than in 1940. In agriculture, the 9 per cent decline in freshman registration was about the same as the decline of 1940 as compared with 1939. In 1941 there were 28,935 freshmen reported as starting teachers courses, or 17.8 per cent fewer than in 1940. The deepest decreases were in 76 independent teachers colleges having 20,842 freshmen, or 19.1 per cent fewer. This startling decline in enrolments of persons preparing for teaching may prove to have serious consequences, coming as it does at a time when serious shortages of teachers were being reported for the first time in 20 years.

Enrolment figures were reported from 187, or 72 per cent, of the public junior colleges, and from 200 or 57 per cent of the private junior colleges. Of the public junior colleges, 29 reported an increase, 19 reported no change, 139 reported a decrease. The reports ranged from an increase of 40 per cent to a decrease of the same amount. Of the private junior colleges, 73 reported an increase, 56 reported no change, 71 reported a decrease. Reports ranged from an increase of 60 per cent to a decrease of 50 per cent. On the average, enrolments of the public junior colleges showed a drop of 10 per cent, while the private junior colleges, as a group, showed no change.

With few exceptions, the public junior colleges are coeducational,

while among the private junior colleges only 60 per cent are coeducational; 30 per cent are for women and 10 per cent for men. It is the coeducational junior colleges that show a decline. Enrolments in junior colleges for women show an increase, as do those of junior colleges for men, partly because some of these are military schools. Decreases were accounted for by improved employment conditions. The sophomores frequently failed to return. Increases were accounted for by greater offering and interest in technical and vocational courses. For the women students this meant largely secretarial courses. Military schools recorded large gains in enrolment.

Further sharp declines in university and college enrolments are to be expected. An analysis of 1941 enrolment figures discloses that colleges offering technical and practical courses, especially those related to the defense effort, maintained or increased their enrolments in such departments. Higher education must now be fully integrated with the war effort. This involves a major readjustment on the part of most of our colleges and universities, a necessary readjustment, both from the point of view of the successful prosecution of the war and of the ability of the colleges to survive during the war.

HIGHER EDUCATION AND NATIONAL DEFENSE

Great progress was made during the year in the coordination of higher education with the defense program. The writer spent the academic year 1940-1941 in visiting colleges and universities in all sections of the country. Frequently during that year he asked college and university administrators what their institutions were doing in connection with the national defense program. Almost invariably the reply was the same: "Nothing." When asked why they were doing nothing, they replied that they had been told that there was nothing for them to do. Some of them had gone to Washington, or had sent their representatives, for the purpose of finding out what

their institutions could do. They said they had been told to go back home and run their colleges.

There has been a great change in the situation since the spring of 1941. The American Council on Education published its pamphlet, "Education and the National Defense," in June, 1941. The following statement represents the concept of national defense development in this pamphlet: "What do we mean by national defense? (1) the maintenance of military and naval forces at an appropriate level of efficiency; (2) intelligent conservation and utilization of the nation's resources; (3) development of the health and physical status of the American people to the highest possible level; (4) development, through education, of the native capacity of the population for individual and social well-being to the highest possible level of effectiveness, including mental alertness, the growth of moral and ethical values in the individual, the development of a sense of responsibility, and of capacity for effective cooperation."

The Council conceived the function of higher education in the program of national defense to be as follows: "(1) to provide the nation *at once* with personnel and services which the responsible officers of the government, both military and civil, regard as immediately necessary; (2) to plan to meet additional needs in the *near future* for such personnel and services; (3) to maintain as nearly as may be possible and wise the normal processes of education in order to assure to society in the *long future* an adequate supply of trained men and women for professional and other activities. Our first concern is that our culture and way of life shall survive; our second is that it shall be handed on."

Participation in defense-job training at the college level by qualified non-engineering institutions was authorized by Congress in July, 1941. The sum of \$17,500,000 was provided for the cost of courses "designed to meet the shortage of engineers, chemists, physicists, and production supervisors in fields essential to the national de-

fense." The first program was financed by a \$9,000,000 appropriation approved in October, 1940. Under its provisions approximately 2,300 courses were set up for over 130,000 trainees by 144 engineering colleges in 47 states, the District of Columbia, and Puerto Rico. Under both programs instruction is given without charge to persons with the necessary educational qualifications who are employed or employable in defense work.

The *Journal of Higher Education* for November, 1941, states: "The nation's first center where engineers, mathematicians, technicians, and other specialists in defense production can devote their full time intensively to problems of higher mathematics as applied to industry has been set up at Brown University. The special training program is launched as an answer to what a committee of the National Research Council, reporting to the National Resources Planning Board, describes as a 'critical need' in the defense efforts of the country.

"Brown has gathered a group of outstanding professors, lecturers, research directors, and experts associated with industry, from all parts of the nation. Four courses in applied mechanics are to be offered: Partial Differential Equations, Fluid Dynamics, Elasticity, and a seminar for weighing current research problems in elasticity and fluid dynamics.

"With the cooperation of the United States Office of Education and aided by a grant of funds from the Carnegie Corporation of New York, the center will require no tuition from its students. Brown expects that a number of its students will come directly from industries. These students will be asked to bring with them problems which require mathematical formulation and solution. Instructors and advanced graduate students in mathematics will also be enrolled. A maximum of 60 students will be accepted. All candidates must already have had considerable experience in various branches of higher mathematics, physics, and mechanics, amounting to the equivalent of a year of graduate study."

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Examples of other institutions offering defense training courses and activities are:

Pennsylvania State College is conducting free courses in 113 centers throughout the state for the purpose of relieving the shortage of technical labor in many defense industries. These courses, sponsored by the U.S. Office of Education, range from elementary engineering to highly specialized courses in such fields as metallurgy, chemistry, and elasticity.

The Department of Chemistry, Polytechnic Institute of Brooklyn, is conducting a series of seminars on alternate Saturdays on the general subject of Elasticity and Plasticity with emphasis upon the molecular structure of plastic and elastic materials.

Thirteen courses in defense training and engineering science are being offered at City College (N.Y.), School of Technology. They are open to the public free of charge, admission requirements ranging from mere employment in some defense industry to graduation from an engineering school.

The University of California at Berkeley has inaugurated courses in industrial organization and management and in personnel employment psychology. These courses are a part of the Engineering Science and Defense Training Program sponsored by the Government and administered by the university. The objective is to relieve the bottleneck in managerial and supervisory personnel in rapidly expanding defense industries.

Liberal arts colleges, junior colleges, teachers colleges, and other professional schools are offering a wide range of courses related to many aspects of the defense program. Some are courses for soldiers from nearby army camps; some are technical and vocational courses designed to prepare workers for specific jobs; some relate to civilian morale and civilian services in wartime. For example, the School of Education at New York University is offering one course entitled Women at War, and another entitled Children at War.

EFFORTS OF THE COLLEGES TO SURVIVE

Colleges always encounter serious difficulties in wartime, necessarily so, because war and the colleges compete for the same personnel: the nation's youth. War must be served first. The first World War caught the colleges unprepared. During the first year there was virtually no coordination of higher education with the activities of the Government charged with responsibility for the prosecution of the war. In the fall of 1917, enrolment declines of 40 per cent and more were reported, a situation comparable with that in the fall of 1941. After the disastrous experiences of the colleges and universities during the academic year 1917-1918, the Secretary of War announced, May 8, 1918, the plan for establishment of Student Army Training Corps units on college campuses for the following year. It was this much-maligned agency that saved our higher education establishment from extinction during the World War. The results were unsatisfactory, both to the War Department and to the colleges. Both vowed that it should never happen again. It should be pointed out, however, that owing to its unsatisfactoriness, it had a highly important negative virtue: there was absolutely no disposition on the part of the Government to continue the arrangement after the war had ended. The first World War brought the American Council on Education into existence; the present war is testing its effectiveness. It remains to be demonstrated that a better plan will be devised.

ACADEMIC FREEDOM AND TENURE OF FACULTY MEMBERS

A period of crisis inevitably is accompanied by threats to civil liberties, including freedom of speech, and the academic freedom of teachers. The present critical period is no exception. It should be said, however, that there is a far better organization for protection and a far greater disposition to protect academic freedom in this critical period than was true in the

first World War. Most college presidents are not dictators and have no desire to become dictators. There is general agreement that faculty members should be secure in their tenure so long as their services and conduct are satisfactory. There is general agreement that a large measure of academic freedom on the part of the teacher is essential to the proper functioning of a college. Many of our higher institutions, both public and private, have set up careful safeguards against unjustifiable dismissals of faculty members. The University of Washington adopted an excellent code of faculty regulations governing appointments, promotions, and dismissals on March 4, 1941.

The American Association of University Professors has as its most important function the protection of the tenure and academic freedom of faculty members in higher institutions. The Association of American Colleges is a voluntary association representing most of the liberal arts colleges in the United States. Membership is institutional, and the administrative heads of the institutions normally represent their colleges at meetings of the Association. The Association is not an accrediting body, although some selection is exercised in admitting colleges to membership. The American Association of Teachers Colleges is a voluntary national accrediting agency for the country's teachers colleges. In this association, as in the Association of American Colleges, the presidents normally represent their colleges at meetings of the Association. All three associations have a legitimate interest in problems relating to tenure and academic freedom of faculty members, the A.A.U.P. representing the interests of the faculty members, as such, and the other two associations representing institutional interests and institutional standards.

In 1937, the Association of American Colleges and the American Association of University Professors, acting through committees appointed for the purpose, undertook joint conferences for the purpose of arriving at a statement of principles relating to

academic freedom and tenure that would be mutually agreeable to the two associations. These conferences continued through 1940 and resulted in the adoption by the Association of American Colleges of a statement of principles at its annual meeting in January, 1941, which was agreeable to the A.A.U.P.

The American Association of Teachers Colleges, acting independently of the other two associations, had adopted a standard in opposition to political interference at its meeting in February, 1937. At subsequent meetings this standard was elaborated and made more specifically applicable to appointments and dismissals of faculty members and administrative officers. At its meeting in February, 1940, the Association directed its Standards Committee to develop a detailed standard dealing with tenure and academic freedom. They were instructed to work with the A.A.U.P. to the end that, if possible, a standard might be presented for adoption by the Association that would be mutually acceptable to the A.A.T.C. and the A.A.U.P. The result was that the American Association of Teachers Colleges at its meeting in February, 1941, adopted the same statement of principles that had been adopted one month earlier by the Association of American Colleges and which already had the approval of the A.A.U.P.

The result of the cooperative efforts of these three associations is that for the first time in the history of higher education in the United States, a vast majority of all the liberal arts colleges and teachers colleges, including both the privately controlled and the publicly supported institutions, are obliged to adhere to a common statement of principles governing their actions relating to academic freedom and tenure of faculty members. No doubt these principles will be violated from time to time in individual institutions. Such violations, however, will be hazardous to the institution because they will be accompanied by the danger of loss of accreditation or of expulsion from member-

ship in the Association. The most promising aspect of the situation is the fact that it was the institutional presidents who voted, by large majorities in both associations, to accept this statement of principles.

GOVERNOR TALMADGE AND THE GEORGIA STATE UNIVERSITY SYSTEM

On June 17th, 1941, the Board of Regents of the Georgia University System reelected Dean Walter D. Cocking of the University of Georgia School of Education by a vote of 8-to-7 in spite of the efforts of Governor Talmadge to have Cocking dismissed. The Governor thereupon demanded the resignations of certain regents who had opposed him and appointed others who would do as he wished. The reconstituted board met on July 14th and by a vote of 10-to-5 dismissed Dean Cocking, President Marvin S. Pittman of the South Georgia State Teachers College, and Dr. Curtis Dixon, Vice-Chancellor of the University System. Subsequently, seven additional faculty members were dismissed in response to pressure from Governor Talmadge.

The charge was made against Dean Cocking that he had advocated having connected with the School of Education a laboratory school which both white and Negro children would attend, a charge that he categorically denied. Dean Cocking was also charged by one of the newly appointed regents with being closely identified with the Julius Rosenwald Foundation in Georgia. Since, according to the regent, "this philanthropic group is committed to full racial equality, including intermarriage," it would follow that "Dr. Cocking favors such equality."

The Governor had earlier charged President Pittman with "partisan politics," but no mention was made of this at the meeting on July 14th. It was stated, however, that Dr. Pittman had used on his farm 300 materials belonging to the state. Against the implications of this charge, George Woodruff, a member of the regents, called attention to the fact that the

regents themselves, two years before, gave Dr. Pittman permission to use the materials in return for produce for the university system. The dismissal of Vice-Chancellor Dixon was equally without justification. The Georgia State University System includes the state supported colleges for Negroes as well as those for white students. Dr. Dixon had previously been employed by the Julius Rosenwald Foundation, and had been employed by the regents because of his expert knowledge relative to Negro education. It was because of this background that Governor Talmadge had him dismissed. The dismissals of the seven other faculty members were for equally unjustifiable reasons.

Governor Talmadge did not have long to wait to learn that it is not safe to tear a higher educational establishment to pieces for political purposes. In July the General Education Board rescinded its grant of \$25,000 to the university system. In July, also, the Southern Association of Colleges and Secondary Schools began investigating political interference in the Georgia University System, implying a possible withdrawal of intercollegiate recognition of Georgia's degrees and credits. The last item to come to the attention of the writer relative to this controversy is taken from the newspaper *PM*, Friday, Nov. 21, 1941. It states: "The Georgia Board of Regents has defied Governor Talmadge by moving to reinstate 10 educators ousted at his direction. . . . Only three weeks ago the Governor had asked the regents to 'use your best judgment and offices to correct this whole unfortunate situation and to correct any wrongs which may have been done in the course of events.' . . . Five regents met with officials of the Southern Association of Colleges and Secondary Schools, which had dropped Georgia, depriving it of scholastic standing and its graduate degrees, in an effort to dissuade the association." The Southern Association, quite properly, proceeded to drop the Georgia institutions.

It is worth noting in this whole situation that it was Southern public

opinion, Southern newspapers, and Southern accrediting agencies that waged this apparently successful fight against Governor Talmadge in his effort to disrupt the higher educational system of Georgia for his political purposes. The Governor was thus deprived of the tremendous political advantage of being able to charge that Northern interests were interfering in Georgia's business.

PROGRESSIVE EDUCATION ASSOCIATION STUDY

The study of the relation of school and college started in 1933 by the Progressive Education Association has been completed. Under the chairmanship of Wilford M. Aikin, Ohio State University, a special committee has sponsored the study involving 30 secondary schools which have laid aside old curriculum patterns and introduced new ones with greater emphasis on individual development. The Commission has followed the graduates of these schools into college. A six-volume report on the findings of this study has been published. The following conclusions may be drawn, according to Dr. Aikin: 1. A student's success in college is not dependent upon his following a prescribed pattern of subjects or units in the secondary school. 2. The work of the high school can be related much more significantly to each student's

interests and purposes. This is an advantage rather than a detriment to his own work in college. 3. Freedom from prescribed college requirements has been a great challenge and stimulation to the participating schools. Without exception they say that it has resulted in the greatest period of educational growth in the school's history.

1941 ANNIVERSARIES

Rutgers University celebrated the 175th anniversary of its founding. The University of Vermont celebrated the 150th anniversary of its founding Oct. 3-5.

The following celebrated the centenaries of their founding: Fordham University (N.Y.), Sept. 15-17, 1941; Ohio Wesleyan University (Delaware), Sept. 21, 1941, when the reconditioned Gray Chapel was dedicated; the College of Literature, Science and the Arts, University of Michigan's first teaching unit in Ann Arbor, Oct. 15th, 1941.

The following celebrated the 75th anniversaries of their founding: Fisk University, Nashville, Tenn.; University of New Hampshire, June 17-27; Lehigh University, Bethlehem, Penn., October.

The following celebrated the 50th anniversary of their founding: Stanford University, June 16-21; University of Chicago, and Drexel Institute of Technology in Philadelphia.

EDUCATION FOR THE PROFESSIONS

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BUSINESS EDUCATION

Trends.—The increased interest in consumer education has continued to be an important development. Increasing prices, priorities, and use of substitute materials during 1941 helped to focus attention on the problems of consumption. The defense program and the entry of the United States into war emphasized the aspects of business related to production and distribution. Methods of

making unit cost studies, job analyses, and time studies are typical of the topics which are of value to increase the efficiency and adequacy of the emergency program.

Distributive Education.—June 30, 1941 marked the end of the fourth year of the operation of the distributive education program. During 1941 a bulletin was issued by the U. S. Office of Education entitled *Distributive Education Organization and Ad-*

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ministration. This excellent 50-page pamphlet includes information on the provisions in the George-Deen Act, objectives in distributive education, and qualifications of distributive education personnel. The administration of distributive education is described in detail, and the various types of classes are explained. Suggestions concerning teacher training are related to the kinds and types of training, reimbursable courses, and the selection of trainees. Since problems of distribution are of vital importance during war times, this program grew even more rapidly during 1941 than it did during 1940. It is estimated that the total enrolment in all the classes under the program is almost double that of a year ago. The need for this type of education will become still greater as more and more people now working in the field of distribution shift their occupation to military service or to some job in the production of defense materials.

Courses on the College Level.—Dr. Hamden L. Forkner is serving as the leader of a committee of the Department of Business Education of the National Education Association studying terminal business education in the junior colleges. Professor D. D. Lessenberry is directing the work of another committee of the Department, considering a dictionary of business education terminology. This committee will cooperate with a committee of the National Council for Business Education which is engaged in a similar project.

ENGINEERING EDUCATION

Defense Training Program.—The Emergency Defense Training Program authorized by Congress in October 1940 trained 118,740 individuals from December 1940 to the end of June 1941, and this was accomplished through courses authorized at 144 different institutions. The Engineering, Science, and Management Defense Training Program began July 1, 1941, and it provides for the training of approximately 163,100 trainees in 144 institutions. The chief differ-

ence between these two programs is that the latest one makes provision for the training of chemists, physicists, and engineers while the one started in 1940 was almost if not entirely for engineers. Both of these training plans were under the direction of the Office of Education, a part of the Federal Security Agency, and they were both inaugurated in response to the unprecedented demand for technical workers caused by expansion in the Army, the Navy, and industry. The cost of instruction for the courses mentioned has been paid by the Federal Government, and they have varied in length and purpose. Some of them have been planned as pre-employment training and others have been organized for upgrading those already employed. The duration has ranged from a few weeks to six months.

Professional Development.—The Engineers' Council for Professional Development gives advice and makes recommendations. The Committee on Student Selection and Guidance organized committees of engineers to meet with high school boys who had indicated interest in the study of engineering. It is thought that the emphasis in the selection of students for admission to engineering schools is almost entirely on scholarship. It is suggested that personal contact of the applicant with a personnel officer or committee is desirable where doubt exists about the social habits of the individual. The publication of a guidance pamphlet entitled *Engineering as a Career* was planned for early 1942.

The Committee on Engineering Schools has now accredited 542 undergraduate engineering curricula at 125 institutions, and 164 curricula have been inspected but not accredited. During the year there was a re-appraisal of 70 curricula not previously accredited and the inspection of 32 curricula not on the accredited list of October, 1939. The Committee reports that "quantitative criteria were subordinated to qualitative factors as a measure of the soundness of a program of study."

The Committee on Professional Training cooperated with local sections of constituent societies in helping to plan study courses, lectures, and discussions, plant visits, and inspection trips. Some groups used self-analysis questionnaires and suggested reading lists of both engineering and non-technical literature. College and university extension courses and company training courses aided in continuing the professional training.

The Engineers' Council for Professional Development has drawn up certain standards or minimum qualifications of education and capability for an engineer. These standards influence both the engineering societies and the state engineering registration boards in their granting of professional recognition. It is estimated that there are approximately 70,000 registered engineers and about the same number of members of the older engineering societies. However, there is confusion because the majority of each of these groups does not belong to the other.

Trends.—There was an increase of about 14 per cent in the number of persons starting engineering courses in the fall of 1941 compared with the number of engineering freshmen in the fall of 1940. There was a small decrease in the evening enrolment but this was not significant except as it may have been due to the influence of the tuition-free courses sponsored by the Federal Government.

The American Society of Mechanical Engineers found in a study of the teaching of professional ethics that they are taught in 49 schools offering work in mechanical engineering by means of courses, lectures, or in student branches.

A study of the bases of selection of engineering students is being made by joint action of the Society for the Promotion of Engineering Education and The Engineers' Council for Professional Development. Selective Service Boards are now deferring engineering students because of the need for their services upon the completion of their period of study.

LEGAL EDUCATION

Rules for Admission to the Bar.—

All the states of the United States except six now require two years of college training or its equivalent as one prerequisite to admission to the Bar. Forty states, the District of Columbia, Hawaii, Philippine Islands, Puerto Rico, and Virgin Islands require three years of full time legal study or a longer period of part time study believed to be equivalent. Five states and Alaska insist on a minimum of two years of legal study or the equivalent. Three states have not established any mandatory period of legal study for admission to the Bar.

The Section of Legal Education and Admissions to the Bar of the American Bar Association estimates that less than 5 per cent of the candidates admitted to practice during the year received training only through an office clerkship. Nine states do not grant any recognition for legal study in law offices. Hawaii, Philippine Islands, Puerto Rico, and Virgin Islands take the same stand. South Dakota will not recognize this method of preparing for the Bar after Sept. 1, 1942, and the District of Columbia will enforce the same rule after July 1, 1944. Twenty-nine states and Alaska require the registration of office students before they begin legal study.

Two states do not ask that students have any preliminary general education before the study of law. A preliminary high school education or its equivalent is now required by four states, Alaska, and the District of Columbia. Thirty-nine states, District of Columbia, Hawaii, Philippine Islands, Puerto Rico, and Virgin Islands have a minimum standard of two years of preliminary college education or its equivalent. Delaware, Kansas, and Pennsylvania insist that the individual earn a college degree or the equivalent before beginning the study of law.

National Conference of Bar Examiners.—This organization, which represents the bar examiners and character committees of all the states, has continued to expand its character

investigation service. By December 1941, thirty-two states, District of Columbia, and Hawaii made a practice of having a thorough investigation by the Conference regarding the moral character and reputation of attorney-applicants leaving one state and seeking admission to the bar of another. It is the desire of the Conference to prevent the admission to the bar of attorneys whose previous records indicate lack of good moral character.

A *Manual for Bar Examiners* was published in January, 1941. It was prepared by a committee with Sheldon D. Elliott of the University of Southern California serving as chairman. The manual was sponsored by the Association of American Law Schools, the Section of Legal Education of the American Bar Association, and the National Conference, and it was distributed without charge to each Bar examiner in the United States.

The Conference, at its annual meeting in Indianapolis, authorized the appointment of a committee to study the desirability and feasibility of preparing a standard bar examination and making it available to state examining boards. A report on this matter will be given at the next annual meeting of the Conference to be held in Detroit in August 1942.

Law Schools.—During 1941 the American Bar Association, on the recommendation of the Council of the Section of Legal Education and Admissions to the Bar, granted final approval to the College of Law of the University of Toledo, Toledo, O. and the College of Law of Willamette University, Salem, Ore. Provisional approval was granted to the following institutions: Detroit College of Law, Detroit, Mich.; School of Law of Lincoln University (colored), St. Louis; School of Law of the University of Miami, Miami, Fla.; School of Law of the University of Newark, Newark, N. J., and School of Law of Southeastern University, Washington, D. C.

The enrolments in law schools in the United States for the first semes-

ter or quarter of the academic year 1941-1942 decreased on the average about 25 per cent. in comparison with the year 1940-1941. The Selective Service Act was one important cause of this decline in the registrations of law schools.

Post-Admission Legal Education.

—The number of legal institutes held during 1941 was considerably greater than in 1940, and the programs were augmented. The wide expansion in this advanced legal education was carried out by the organization of "Big City Institutes," "Rural Institutes," and "Law School Institutes."

Civil Service.—All lawyers working for the Federal Government have been placed on civil service, and the Board of Legal Examiners has been established subordinate to the United States Civil Service Commission. In the future all lawyers will take examinations prepared by this body before they will be eligible for positions in the Federal Government.

Choosing a Law School.—This 15-page pamphlet was prepared by the Section of Legal Education and Admissions to the Bar and first published in September 1940. It has been so popular that several printings have been necessary to satisfy the demand. Information is provided concerning the cost of a legal education, American Bar Association Standards, prelegal study, the curriculum of approved law schools, and scholarships and fellowships.

MEDICAL EDUCATION

Defense Activities.—The Committee on Medical Preparedness of the American Medical Association is giving all possible assistance to the military forces and to the preservation of the safety and welfare of civilians. The Council on Medical Education and Hospitals aided by encouraging the speeding up medical training and by holding many conferences with the medical services of the military organizations of the United States. Seventy-six medical schools announced that they would organize courses on a 12-month basis starting July 1942 and complete the full four-

year program in three years. The medical curriculum has not been shortened but the length of vacations has been abbreviated. Affiliated hospital units have been organized in such a manner as to enable the teaching of medical students to continue in the event the unit is called to active service. Junior and senior medical students in grade A medical schools in the United States were permitted to apply for appointment in the lowest grade in the Medical Administrative Corps Reserve after July 1, 1941.

Improvements in Medical Schools.

—During the school year 1940-41, ten schools increased their annual budgets, and several institutions added additional instructors to their laboratory and clinical divisions. During the same period 12 schools improved their preclinical or clinical facilities, and the libraries of three schools were augmented by building facilities, by a large addition of books, or by a grant. Other noteworthy changes included extension of the curriculum, strengthening the staff in psychiatry, and innovations to increase the practical value of the training in medicine.

Preliminary Education.—The Council on Medical Education and Hospitals of the American Medical Association published the annual list of approved colleges of arts and sciences. The list comprised 701 institutions approved by certain selected national and regional educational associations. Sixty-nine of the 77 medical schools in the United States now require three or four years of college work of students seeking entrance, and the remaining eight schools insist upon a minimum of two years. Only 1.4 per cent of the freshmen students admitted at the beginning of the academic year 1940-1941 offered less than three years of college preparation. Five medical schools now require the baccalaureate degree as one of their admission requirements.

Internship.—It is estimated, on the basis of recently computed statistics, that 98 per cent of those qualifying for the M.D. degree in recent years have served or are now serving as

interns. Only 11 medical schools in the United States include the internship as one of the qualifications for an M.D. degree, but 21 states, Alaska, District of Columbia, Hawaii, and Puerto Rico require the hospital internship of all applicants for medical licenses. The Aug. 30, 1941 issue of the *Journal of the American Medical Association* states: "Up to July 1, 1941, 278 interns and 569 residents holding commissions in the reserve corps entered the military service before the completion of their current hospital appointments."

Medical Licensure.—Medical licensing boards examined 7,921 persons in 1940, and 20.7 per cent failed to pass. The percentage of all candidates examined in 1939 who failed to pass was 16.3. The percentage of failure was higher among graduates of Canadian schools than among graduates of schools in the United States, and the proportion of those who had received their training in schools outside the United States and Canada failing was more than 50 per cent. The large number of graduates of European medical schools attempting the examinations during 1940 was largely responsible for the increase in the percentage of failures. Nineteen states require that candidates be citizens of the United States, and ten states will not permit an individual to attempt the state board examination unless he has received his first papers. Sixteen states have ruled that applicants holding diplomas or transcripts from schools outside the United States and Canada are not eligible for licensure, and one state has not accepted such applications since Feb. 21, 1941. Other stipulations have been made by varying numbers of states. One of the most widely established concerns a one-year internship in an approved United States hospital. The National Board of Medical Examiners issues certificates to those passing examinations set by this body. These certificates are accepted by 43 states as qualification for a medical license.

Postgraduate Study.—Forty-four states and the District of Columbia

EDUCATION FOR THE PROFESSIONS

gave some opportunity during the academic year 1940-1941 for practicing physicians to enroll in a continuation course or courses lasting five or more days. More than half of the courses were under the direction of medical schools, and 80 per cent of the instructors for this extra-mural work were members of medical school faculties. The study programs were planned by 99 agencies or groups of agencies in 40 states. There were also a large number of conferences, graduate assemblies, and study courses of less than five days duration. Funds were provided by many different departments of the state and Federal governments, so the fees charged were reasonable. It is estimated that the total attendance at the courses, conferences, assemblies, and less than five-day courses was 43,621.

Enrolment and Graduates.—The 77 medical schools enrolled 21,379 students during the school year 1940-1941. The number of graduates in 1941 was 5,275 and the number of licenses issued was 9,115 of which 5,879 were to individuals not previously holding a license. It is estimated that, on the average, 4,000 licensed physicians die each year. The number of women receiving the medical degree in 1941 was 280, and the number of women studying medicine for the year 1940-1941 was 1,146. Women graduates, in 1941, constituted 5.3 per cent of all graduates in medicine in the United States.

NURSING EDUCATION

National Defense.—The Federal Government appropriated \$1,250,000 for nursing education July 1, 1941. It was stated that this money should be used to increase the number of students preparing to be nurses, give post-graduate courses in certain special fields of study, and to prepare inactive graduate nurses for active service. The administration of this program is in charge of the States Relations Division of the U. S. Public Health Service. Two hundred and thirty schools of nursing had applied for a share of this Federal fund by Aug. 11, 1941. Certain conditions were

a part of this offer of financial aid and the allotment of the fund was made after the schools applying had been evaluated according to these standards.

In 1940 it was estimated that a 10 per cent increase in admissions to nursing schools would be needed. The estimate made in 1941 was that a 30 per cent increase over the number admitted to nursing schools in 1940 would be desirable.

A national survey of registered nurses was completed in June, 1941 and the information is being used by local and state defense councils. The facts are of special value in planning refresher courses, in aiding Red Cross committees, and in preparing lists of qualified persons for volunteer service in time of need.

National League of Nursing Education.—The "First List of Accredited Schools of Nursing" was published by the committee on accrediting. This list includes the names of 73 schools located in 20 states. One of the schools in the printed leaflet is "accredited for affiliation in one service." Seventy-two of the institutions named are stated to be "schools offering a basic curriculum." The introduction to the leaflet mentions that these schools meet the legal requirements of the states in which each is located, and that their graduates are, therefore, permitted to take the state examinations to obtain licenses authorizing them to practice as registered nurses.

Enrolments and Schools.—It is estimated that there were 450,000 registered nurses in the United States in 1940. There were 1,303 state-approved nursing schools in 1940 and, 97 per cent of these schools required at least four years of high school work as one of their admission regulations in 1939. Three per cent of these institutions required some college work prior to admission. A total of 85,000 students was enrolled in state accredited nursing schools in 1940 and in the same year 23,600 received diplomas. The average number of students per school was 65.

Public Health Nurses.—First the

national defense program and, after Dec. 7, 1941, the outbreak of war increased the need for trained nurses in the field of public health. Military camps, new industrial centers, expanded production facilities in old centers of industry, and men not accepted under the Selective Service Act because of failure to pass the physical examination constitute some of the public health problems that are increasing in importance and should be met. Possible emergencies due to sabotage or air raids must be planned for by public health agencies throughout the nation. The National Organization for Public Health Nursing is giving consideration to the needs mentioned above and to many others which have manifested themselves during the closing months of 1941.

Federal Funds.—Three hundred schools applied for a share in the funds made available in July, 1941. The government selected 88 schools to prepare additional student nurses, 67 schools to offer refresher courses to 3,000 graduate nurses, and 26 schools to give post-graduate courses for 500 graduate nurses. It is expected that the student nurse training program will increase the number of individuals in training by 2,000.

Joint Orthopedic Nursing Advisory Service.—The National Foundation for Infantile Paralysis has authorized a grant to the National League of Nursing Education which will be used for a joint project of the N.O.P.H.N. and the N.L.N.E. The funds will be used to pay the salary of a graduate nurse who is a specialist in orthopedic nursing and to provide "a limited number of scholarships for well qualified nurses to enable them to secure advanced preparation and experience in orthopedic nursing in order to qualify for teaching and supervisory positions in schools of nursing."

EDUCATION FOR PUBLIC ADMINISTRATION

Committee on Public Administration.—This committee of the Social Science Research Council provided

funds for a survey of university education for public administration, and during the academic year 1938-1939 George A. Graham of Princeton University visited more than 20 higher educational institutions, and interviewed both public officials who had worked with graduates of these schools and graduates themselves. This survey did not include a study of education for the professions practiced in the public service, and it concerned itself exclusively with education through the social sciences. The findings of the above study became available during 1941, when a volume of 366 pages was published for the committee by the Public Administration Service of Chicago entitled *Education for Public Administration* by George A. Graham. The first part of the book deals with problems, suggestions, and an appraisal, while the second part reviews certain of the training programs now in operation in 16 institutions.

Colleges and Universities Offering Courses.—The sixth annual edition of the "List of Colleges and Universities Offering Courses or Programs of Training" is published under the title *Educational Preparation For Public Administration*, and it includes the names of 80 colleges offering a major, or a special program, for those seeking training for public administration. This indicates that the interest of institutions of higher education in this field is still increasing, as only 73 such centers offered this opportunity in the academic year 1940-1941.

When Mr. Graham made his survey the program at the University of Chicago was described under the heading "Universities without organized training" along with Columbia University and Wisconsin University. In October 1941 the Institute of Public Service of the University of Chicago began to function. It is located at the down-town center of the University, and it will make possible the use of the great educational resources available in an organized fashion. The University of Chicago has been a leader in public adminis-

tration because of the funds provided by the Rockefeller Foundation for research and training in this field, because of the interest and effort manifested by the department of political science, and because of the location in a university-owned building of The Public Administration Clearing House and 15 other organizations of public officials.

Several of the colleges and universities offering public administration courses altered one or more of them during 1941 to include topics and problems on national defense. Some institutions, notably Harvard University, introduced new courses organized especially to consider the problems of defense administration. The increased demand for state and Federal agencies to cope with the production and distribution problems that have become of increasing importance since the entrance of the United States into war has augmented the demand for persons with some background of training and experience in public administration.

TEACHER EDUCATION

Enrolments.—The National Education Association collected information concerning enrolments in teacher education programs in the late fall of 1941 and estimated that the enrolment in state teachers colleges and normal schools was about 11 per cent less than at the same time in 1940. President Raymond Walters of the University of Cincinnati, in his study of 669 approved universities and colleges of the United States, states that, in these institutions, there were almost 18 per cent fewer freshmen starting teacher education courses than in the fall of 1940. President Walters also found that the number of students enrolled in 77 independent teachers colleges was more than 15 per cent less than for 1940.

Complete data on supply and demand of teachers are not available but it is known that, in spite of the several thousand unemployed licensed teachers, at least six of the states paying relatively low salaries

have been forced to issue emergency certificates based on lower educational standards to fill an estimated 5,000 teaching positions. This estimate was made before the United States declared war, and it is probable that, with the increasing number of industrial jobs that pay higher wages than the rural teachers receive in the less wealthy states, more and more difficulty will be found in filling these positions unless the salaries are considerably increased. Even in many of the wealthier states, rural teachers, industrial arts teachers, physical education teachers, and business teachers are finding better positions in industry or government or larger school systems, and it is difficult to find properly qualified individuals to replace them.

The Commission on Teacher Education.—This project of the American Council on Education, which began a nation-wide study of teacher preparation and growth in 1938, continued its many activities during 1941 with the cooperation of an increased number of individuals and institutions. The fourth annual joint conference on teacher education in the United States was held in Atlantic City Feb. 22, 1941. The conference was sponsored by 15 organizations interested in the education of teachers. It considered the evaluation of teacher education and the programs in operation in the seven teachers colleges in which the Commission is directing a cooperative study.

Dr. Ernest V. Hollis, field coordinator on the Commission staff, made an analysis of the occupational status of all living persons receiving the Ph.D. or Ed.D. degrees from 1930-1931 through 1939-1940. This study will be published in 1942. One of the interesting facts brought to light was that, of the 22,508 persons on whom the Ph.D. degree was conferred during the ten years, only slightly more than half are now engaged mainly in teaching.

During the summer of 1941 the Commission aided in the programs of four workshops of regional or national importance, three workshops

concerned with teacher education in general, and a single workshop that studied "the implications for educators of the known facts of child growth." Three public-school workshops were assisted, and state-wide workshops in Michigan and New York were helped through the participation of members of the Commission staff, as was one held at the Claremont Colleges. Financial assistance was granted to workshops held by the public-school systems of Denver, Des Moines, Greenville County (S. C.), and Houston, Tex.

The National Teacher Examinations.—These examinations, prepared, given, and scored under the direction of the National Committee on Teacher Examinations of The American Council on Education, were administered for the third time on Jan. 2-3, 1942. In March, 1941, 4,718 candidates were examined at 64 official examining centers and ten sub-centers. During 1941, 172 school systems indicated their desire to receive records of the National Teacher Examination for the purpose of considering the results along with other information about candidates for teaching positions. The Committee states that records of experience, personal traits, academic marks or grades, and opinions based on interviews must be given consideration in connection with the use of the examination scores. The relative amount of importance given to the scores made is left to the local school system to determine.

American Association Of Teachers Colleges.—The Minimum Standards for Accrediting Teachers Colleges and Normal Schools were revised in February, 1941, and new statements were included under the headings "The Educational Program" and "Appointment, Academic Freedom and Tenure." The minimum standards for graduate work leading to the master's degree in teachers colleges which were adopted in February, 1939 were not changed. About half of the teachers colleges offering work leading to the master's degree were inspected during the spring of

1941, and those measuring up to the standards were approved.

The total membership of the A.A.T.C. was 185, and 158 of these institutions were on the accredited list as far as their undergraduate programs were concerned. At the meeting of the Association in February, 1941, it was voted that "institutions not on the accredited list in 1942 may not be members of the organization after that time." Institutions may still qualify for accrediting but will not be members until accredited.

THEOLOGICAL EDUCATION

American Association of Theological Schools.—The executive secretary, Dean Edward H. Roberts, has supplied the facts for this statement on Theological Education. The next Biennial Meeting of the Association will be held in Rochester, N. Y. in June 1942.

Military Training and Service.—The Selective Service Act exempts theological students from military service and some local draft boards are placing the names of pre-theological students on the deferred list. The American Association of Theological Schools did not make a request to Congress that theological students be exempted nor did it ask that pre-theological students be granted deferment.

Enrolments and Recruiting.—Complete statistics are not available but it is estimated that there was an increase in the number of individuals attending theological seminaries during the academic year 1940-1941 and a larger increase in those enrolling for the academic year 1941-1942. A committee is vigorously at work on the problem of recruiting outstanding men for the Christian ministry, and it is more concerned with quality than numbers. The committee plans to enlist the aid of the local ministers as it believes they are the key men in the total situation. Many universities and colleges have indicated interest in calling the attention of their students to the ministry as a life work.

The Rural Ministry.—The A. A.

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T. S. has a special committee considering the problems related to the rural church, and it is investigating the following possibilities: revising the seminary curriculum; revising the seminary policy; providing for closer cooperation between Colleges of Agriculture and Theological Seminaries.

Courses of Study.—There was a tendency, during 1941, to increase the number of courses in theology, doctrinal and expository preaching, and in pastoral and counselling work. There appears to have been an increase in interest in the ecumenical movement during the year.

Extension Education and Field Work.—During the year the committee on promotion in Protestant Churches made a thorough study and plans to send specific suggestions on promotional work to the ministers. Another excellent committee is developing recommendations dealing with the outside work which students engage in while enrolled in the Seminary, summer work, and a year's internship.

TRAINING FOR SOCIAL WORK

Schools of Social Work.—The membership list of the American Association of Schools of Social Work was revised in September, 1941, and on that date it included 38 schools. Thirty-five of these offer a two-year course, while three conduct a one-year program. On Nov. 1, 1941 there were 5,756 students enrolled in the 38 schools mentioned above. The number of students majoring in social work was 4,886 of which 3,932 were women and 954 were men. There were 305 students who were not enrolled but were working on theses

under the direction of one of the member schools. During the autumn term 1940 and the summer session 1941, 1,305 students majoring in social work received degrees, diplomas, or certificates.

Trends.—The demand for trained social workers which was mentioned a year ago has continued to increase, due first to the defense program and, after Dec. 7, to the war program. All of the schools of social work including those not members of the American Association of Schools of Social Work have been graduating about 2,000 students a year, and it is estimated that of the 100,000 or more positions that exist and should be filled by persons with social work training only about 50,000 are now filled or being held by properly qualified individuals. Dean Leonard W. Mayo of the School of Applied Social Sciences of Western Reserve University mentioned the above information in an article in the Dec. 13, 1941 issue of *School and Society*. He also suggested that some financial aid might well be supplied by the Federal Government "to enable the schools of social work to offer scholarships to selected students so that we may have a larger number of workers two years hence—"

Several institutions of higher education have announced "speed-up plans" to cut the undergraduate course of four years to three by having college in session all year round and eliminating the summer vacation. These plans are to begin operating in 1942. Social work is taught, in the majority of cases, on the graduate level, but it is likely that speed-up plans will frequently include graduate as well as undergraduate courses and students.

ADULT EDUCATION

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GENERAL

It is difficult to prepare a representative statement on developments in the field of adult education. The movement is not well-defined either when considered in relation to agencies which contribute to it or in relation to types of projects which lead to adult learning. The field shows a range of activities from courses for the liquidation of illiteracy to courses at the university level. There are public educational agencies and probably public propagandist organizations; at the same time there is difficulty in drawing a line between private educational agencies and private propagandist bodies. The distinction must rest on whether emphasis is laid on educational work or propaganda.

The year has again seen large advances in adult education, the result of at least two situations. Social, economic, and political conditions for the past decade have been such as to arouse and to stimulate interest in further education. The second factor has been the emergency defense situation which has led the Federal Government to continue to recognize adult education as an indispensable part of a national defense program. Congress has appropriated \$116,122,000 to the U. S. Office of Education for distribution to the nation's schools and colleges to help an estimated 3,000,000 workers the better to qualify for work in defense industries. This is by far the largest appropriation ever made for adult education.

The growth of the movement is also attested to by a change in the status of the American Association for Adult Education. For the past 15 years, the Carnegie Corporation of New York has been the chief source of financial support for the Association. Now this measure of support has been withdrawn. The promotion

of the cause is no longer of first importance in the eyes of the Corporation. As evidence of continued interest, however, the Corporation established an Institute of Adult Education in connection with Teachers College, Columbia University, endowing it for a ten-year period. The Association is to proceed under its own initiative and support. This move is important because the American Association for Adult Education has served as a national center of interest for adult learning.

The need for a national citizenship education program has been recognized by the setting aside of \$14,000,000 of WPA funds for this type of program. The extension teaching of colleges and universities has been vastly stimulated by conditions of the times.

U. S. OFFICE OF EDUCATION

The defense training program was initiated by the demand for a trained labor supply as defense production by industry began to grow in early 1940. In October, 1940, an act (P.L. 812, 76th Congress) was approved carrying appropriation (\$60,500,000) to the Office of Education for a continuation of the defense program of the public vocational schools for "pre-employment, refresher and supplementary" training courses. Many school systems were by that time operating their vocational schools 24 hours per day.

The act also provided for giving short engineering courses of college grade to be provided by engineering schools, such courses being designed to meet the shortage of engineers in fields essential to national defense. Funds were further provided for instruction of National Youth Administration Project employees and for out-of-school rural and non-rural

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youth and enrollees of the Civilian Conservation Corps.

In the public vocational school program enrollments as of June 30, 1941, there were estimated by the Office of Education to be: pre-employment refresher, 420,530 persons; supplementary, 467,614; out-of-school youth, 254,511; for engineering courses of college grade, 118,740; and N.Y.A., 285,541. The act made provision for purchase of needed equipment for instruction.

Appropriations to continue this program in 1941-42 (P.L. 146, 77th Congress) totalled \$116,122,000. To meet demonstrated needs, the college program was broadened to include, besides engineers, chemists, physicists, and production supervisors.

Machine shop, aviation services, and welding were the three major types of courses in which the large bulk of enrollments in public vocational schools fell. Four general types of courses were approved for the out-of-school youth program: (1) operation, care, and repair of tractors, trucks, and automobiles; (2) metal work, including simple welds, tempering, drilling, and shaping; (3) woodwork; and (4) elementary electricity. This training program has a dual value for defense and for community peace-time needs.

In order to function properly the U. S. Office of Education established working relationships with the Department of Labor, U. S. Employment Service, WPA, NYA, CCC, and with the colleges and universities participating in the program.

Public school officials and others have questioned Federal operation and control of some of these educational programs. The vocational school defense training was carried on under regular vocational school procedures evolved in 23 years of operation of these schools; the college program was left very much in its operational aspects to the individual colleges; but training activity by the NYA and CCC were received with distrust. The U. S. Commissioner of Education and the Administrative heads of the NYA

and CCC developed working arrangements under which training programs of these agencies were to be under the supervision of local public school organizations responsible to their state boards of vocational education and to the Office of Education. The Educational Policies Commission contended in a published study (*The CCC, NYA, and The Public Schools*, October, 1941) that the NYA and CCC should be discontinued and their functions transferred to other appropriate agencies.

CIVILIAN CONSERVATION CORPS

A secondary labor reserve for defense is the Civilian Conservation Corps, and the defense training acts have made provision for special training in the out-of-school youth program for the 180,000 CCC enrollees. Studies made by camp authorities indicated that 62% of the enrollees live in rural areas, and it was deemed legitimate that they receive training under this program. Frequently the youth were transported from the camps to nearby towns; in other cases, instructors went to the camps to give instruction in pre-employment defense training courses.

It needs be further noted that 95% of the enrollees are from underprivileged families; nine out of ten are in the age group of 17-20 years; eight out of ten have had no or little employment previously; and three out of ten have never completed grade school. Enrollees ordinarily receive vocational experience in their camp work projects. Approximately half the men register for vocational courses, and thousands of illiterates are taught to read and write. Defense training came in addition to this regular program.

The camps have had a hand in rehabilitation of veterans, 200,000 having been enrolled since the first camp in 1933. The average age of these veteran enrollees is now 49 years.

During the current year on work projects the camps will train 60,000 drivers of trucks, tractors and other automotive units; 15,000 auto me-

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chanics; 60,000 road construction and maintenance men; 7,500 bridge builders; and 8,000 blasters, to name but a few specialties. Furthermore, 6,500 cooks, 2,500 radio operators, 5,000 company clerks and others will be trained in special schools.

UNIVERSITY EXTENSION

Engineering colleges played a significant part in defense training and, with the broadening of the program in 1941-42 to include not only engineers, but also chemists, physicists, and production supervisors, tax-exempt, degree-granting colleges and universities in these fields were included. In some institutions these programs were administered by the university extension service, but in others by the resident departments or schools. The largest single program was conducted by the Pennsylvania State College through its Extension Services where, in some 120 centers in Pennsylvania, approximately 35,000 persons registered for courses during 1941.

This training program consisted of short intensive courses "on the college level" with special consideration given to in-service training needs in the communities where classes were offered. In general, courses fell under five broad headings: fundamentals; sub-professional courses, including drawing; engineering design and similar highly technical subjects; inspection and testing; and production. In practically no instances do the courses carry college credit. In the engineering program, 144 out of an eligible 152 institutions participated. This arrangement between the Federal Government and institutions of higher learning was a significant new development in that the relationship was direct and not through the state departments of public instruction.

During the year a significant study for the A.A.A.E., *The Extension of University Teaching* by James Creese appeared in this field. He reviewed the growth of university extension and the many diverse forms which this service has taken and pointed

to the increasing responsibility of colleges and universities for adult education.

EXTENSION SERVICES UNDER WAY

Many interesting projects are under way under the direction of college and university extension services. At the University of Alabama, radio broadcasting service is being initiated; Oregon State System of Higher Education offers among others an extension course on "U. S. Military Organization and the National Defense," also a two-week short course for U. S. Forest Officers in Service; State College of Washington is conducting seven regional visual aids conferences in the state; University of South Carolina has prepared special study outlines on "Our Southern Neighbors" for use of women's clubs; Indiana University is cooperating with the vocational schools in work for those in distributive occupations under the George-Deen Act; University of Iowa over station WSUI carries on a broad program of adult education; University of Chicago offers home study courses to members of the U. S. armed forces below the rank of non-commissioned officer at a 50% reduction in fees; University of Colorado conducted regional meetings throughout the state dealing with the place of adult education in a time of crisis; University of Michigan recently signed an agreement to sponsor the Michigan Boy Scout organization; University of Nebraska is working on a cooperative program with the Nebraska Federation of Labor; University of Virginia is conducting an interesting experiment in community self-help; University of Wisconsin has carried on a study of curriculum needs of small high schools; and University of Texas with its package library loan service filled 30,000 requests in a single year. This is in nowise a complete statement of the activity of these institutions; it is made to illustrate the diversity of extension offerings in 1941.

ADULT EDUCATION

WPA EDUCATION PROGRAM

Main emphasis in the WPA educational program is now being given to programs of citizenship education, family life education, Spanish for the Army and Navy, and literacy education for deferred selectees.

The most significant program now operating in a majority of the states is the National Citizenship Education Program, designed not only to afford educational opportunity for registered aliens desiring to become citizens, but also to assist aliens to become integrated into our community life. Latest estimates indicate that there are 5,000,000 persons in the United States who are citizens or subjects of some foreign power. One in six are illiterate, and, as of October, 1941, about 1,750,000 had applied for citizenship.

Under the project, classes will be organized, taught, and supervised; instructional materials and aids prepared; teacher training conducted; and other agencies already working in the field given assistance. This is a problem of high importance to the welfare of our country in view of recent developments.

WPA family life education projects include parent and homemaking education and are provided as a part of the nursery school program. Major objectives have been to provide care and protection of children in low-income groups and to provide improved family living. In April, 1941, approximately 132,000 adults, in addition to nursery school parents, attended family life education classes. Major emphasis in the classes is being given to family feeding, child care and guidance, family budgets, and maintenance of family morale. Many classes have been organized in defense areas where dislocated populations are living in large numbers.

The nation-wide Spanish project sponsored by the War and Navy Departments is operating in 57 Army and Navy bases in 22 states. The purpose is to teach conversational Spanish to Army and Navy personnel and to promote a common under-

standing between the peoples concerned.

WPA also has classes organized for 5,000 functional illiterates in Army camps, and plans are under way to assist local draft boards in effecting educational rehabilitation of 100,000 Selective Service registrants who were found ineligible for military service because of failure to pass fourth grade examinations.

AMERICAN ASSOCIATION FOR ADULT EDUCATION

Despite the withdrawal of financial support of the A.A.A.E. by the Carnegie Corporation, officers of the Association hope to have the organization carry on. It was necessary to discontinue publication of the excellent *Journal of Adult Education* with the October, 1941 issue. In its place the Association plans to issue the *Adult Education Journal*. Morse A. Cartwright, director of the Association since its founding, will continue to hold that position, at the same time serving as executive officer of the newly-established Institute of Adult Education of Teachers College, Columbia University. A grant of \$350,000 for a ten-year period by the Carnegie Corporation made possible the establishment of the Institute. Announced objectives of the Institute are to train leaders in the field and to explore improved media and methods of presentation of subject materials for adult study. There is to be close cooperation between the Association and the newly-formed Institute, and the Association will continue to maintain clearing-house and library reference services. The sixteenth annual meeting of the Association was held at West Point, N. Y., in May with the program centering about discussions of democracy in crisis, mobilization of community resources, and adult educational programs of national scope.

LIBRARIES

Adult education would be difficult without libraries. Fortunately they are no longer considered merely depositories of books. Many libraries

are now conducting adult educational work themselves in common with many other organizations. The program of libraries generally during the year was in the form of efforts to increase understanding and appreciation of American democracy. New and prospective demands for library service to defense industries were explored. With the coming of the Office of Education defense training program, librarians discovered that they were weak in reference material in vocational education. *A Guide to Library Facilities for National Defense* was published. Understanding our Latin American neighbors has also been an objective.

The needs of the men in the armed forces have been recognized with all possible assistance being given, though the Army and Navy are setting up their own library facilities. The libraries have not been successful in obtaining Federal aid for public library defense activities and have made relatively slight gains toward adequate rural library service.

Librarians are emphasizing the possibility of using the community library as a center about which community councils of adult education can be organized. The Adult Education Board of the American Library Association is stressing the importance of going out to the large non-user portion of the population. Cleveland Public Library has made distinct advances in this respect with three field workers on the library staff—one to work with labor groups, another with the foreign-born, and a third with public and evening school adult classes.

DEPARTMENT OF ADULT EDUCATION, N. E. A.

The Department of Adult Education of the National Education Association should be mentioned as a professional membership organization in the field. It publishes the *Adult Education Bulletin* with six issues appearing annually. In 1941, the Department worked towards increasing its membership and improving services offered; it now has 3,000 mem-

bers, making it the largest membership organization in the general field of adult education. The Department has taken a stand for Federal aid for adult education.

WORKERS' EDUCATION

It will be agreed that no pattern of workers' education so far developed has led to the real end of all education. In the fifth yearbook of the John Dewey Society just published, *Workers' Education in the United States*, 12 nationally-known educators and labor specialists have undertaken a comprehensive study and review of this field. It is asserted that only as the educational level of the worker is advanced will democracy be preserved. A strong tie-up with the public education system is urged together with the need for an extensive adult education program. Trade unions require intelligent and wise leadership, which can only come through understanding.

The Workers' Education Bureau celebrated its twentieth anniversary in 1941. The occasion was celebrated by a conference devoted to a presentation of recent methods of workers' education and was addressed among others by the U. S. Commissioner of Education. The largest single activity of the Bureau during the year was a program of institutes and conferences.

The educational program of the International Ladies Garment Workers' Union continues to be an outstanding one. This union continued to emphasize a training-for-union service series of classes. All candidates for paid office are required to complete an approved course of training. Hundreds of study groups are organized annually. Several universities carry on projects in the field, among them Rutgers, Nebraska, Wisconsin, Virginia, Purdue.

RELIGIOUS EDUCATION

Interestingly enough, studies show that only a very small percentage of the adult education activities of churches are purely of a religious character. The great percentage of

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effort is in such things as recreation, social issues, parent education, dramatics, and the like. Some even attempt vocational education as, for example, the Young Men's Christian Associations.

Probably the outstanding development in this particular area was the union of several of these religious and welfare agencies to form United Service Organizations for National Defense, Inc. The U.S.O. is composed of the following member agencies: Young Men's Christian Association, National Catholic Community Service, Salvation Army, Young Women's Christian Association, Jewish Welfare Board, and National Travelers Aid Association. The purpose of U.S.O. is to provide leisure-time services to members of the armed forces in buildings, built by the Federal Government, in places adjacent to camps, naval stations, and defense industry centers. A campaign for \$10,765,000 was over-subscribed. Programs will include religious services, personal counsel and guidance, social events, group activities in dramatics and music, club and overnight sleeping facilities. The Morale Branch of the Army performs much the same functions in Army centers.

During the year the educational and recreational program of the Y.W.C.A. reached just over 1,000,000 women and girls through organized clubs and classes of which roughly two-thirds are 18 years of age or over. The Commission on Jewish Education carries on its adult work in Jewish Congregations in four ways: through sisterhoods, brotherhoods, special study circles, and a school for young adults. The Young Women's Hebrew Association of New York City includes in its educational offerings free WPA classes which the Association sponsors. The recently organized National Academy for Adult Jewish Education sponsored the first National Conference on Adult Jewish Education and organized 60 study groups throughout the country.

The International Council of Re-

ligious Education conducted a series of nine regional conferences. The Young Men's Hebrew Association of New York City issued an imposing catalog of courses planned chiefly for those interested in knowledge for its own sake and in lay scholarship. The Knights of Columbus is experiencing much greater demand in its correspondence courses for accounting, blueprint reading, and drafting. The National Council of Catholic Women sponsors a national program consisting of study clubs, leadership education, radio, and institutes. The Federal Council of Churches of Christ in America and many other national religious organizations as well as local bodies sponsor such programs.

EDUCATION AND PROPAGANDA BY RADIO

The war is being fought by ideological propaganda, and radio as well as the battleship is a weapon of war. With the United States now involved, we are fighting Hitler and the Axis powers by means of propaganda over 11 short-wave stations night and day. The most powerful station is WRUL, Boston, which speaks to the world in 24 tongues. Its two transmitters of 50,000 and 25,000 watts are equalled only by Radio Moscow. Even now it can jam anything Germany is known to have, and soon WRUL is to go to 150,000 watts. Then, too, we have set up listening posts to sift and analyze Axis propaganda such as the one at Princeton University.

Radio chains here at home have vied with each other in bringing up-to-the-minute news of the war to listeners. A statement made by the National Broadcasting Co., for which Dr. James R. Angell is educational advisor, indicates that 30% of its time on the air is given over to commercial programs and 70% to sustaining programs consisting of entertainment and public service features.

In September 1941, appeared Vol. 1, No. 1 of *The Journal of the Association for Education by Radio*. This Association had been established for the purpose of bringing together those professionally interested in the use-

fulness of radio in the learning process. Led by San Francisco, certain large cities have been granted licenses to operate new frequency modulation stations for educational purposes solely. Texas has set up in the State Department of Education a department of radio, first of its kind in the country. The Rocky Mountain Radio Council, comprised of 28 educational and civic institutions in that region, continues to flourish. Significant publications and studies in radio, particularly in listener research, have appeared. The work of Dr. Paul F. Lazarsfeld of Columbia University has been outstanding in this respect.

There have been other advances in acceptance of radio as an instrument of education by the public school. A round table on radio was included for the first time in the annual meeting of the Pennsylvania Speech Association. Educational recordings and transcriptions have been much more widely used, NBC having established a special educational recording service. Two issues of the *Journal of Educational Sociology* and one issue of the *Annals of the American Academy of Political and Social Sciences* were devoted exclusively to radio during the year. A six-months study for the National Association of Broadcasters, *Present Day Activities in the Field of Children's Radio Programs*, was made by Dorothy Lewis. The Federal Radio Education Committee of the U. S. Office of Education has continued to publish its *Service Bulletin*. These highlights serve to illustrate the scope of activity in this field.

ADULT SCHOOL IN PHILADELPHIA

In Philadelphia, the adult education council has established The Junto, Philadelphia's adult school. Cooperating with the council were museums, libraries, public schools, colleges, and other local groups. Offerings range from such popular courses as aeroplanes, archaeology, and bird study to short-story writing, the Orient, and others. In promoting the school 300,000 copies of an eight-page printed tabloid was delivered to practically

all homes in the city. Registration totalled 6,400 persons with some 3,000 applications being turned down. The Junto's motto is: "Where Learning Becomes a Genial Pastime." It is a most interesting experiment in popular education.

CIVILIAN DEFENSE

Our defense effort is bringing, under the program for Civilian Defense, such desirable training as that sponsored in many communities by the Red Cross where one adult in every family is being urged to take first-aid training; wherein attempts are being made to diffuse widely the latest findings in nutrition; and better health and better housing are being sold to the people under government-sponsored programs. The U. S. Office of Education in September announced establishment of a School and College Civilian Morale Service, which extends to adult education. This is an advisory service to state and local agencies rather than an operating program.

FARM AND HOME ECONOMICS SERVICE

The agricultural and home economics cooperative extension service, probably the largest and best financed adult education agency in the world, carries on quietly and effectively. This service now reaches into one-half of the 7,000,000 farm families in the United States. Its youth organization now reaches over 1,000,000 boys and girls. It is to be noted that the policy-making and executive functions reside in the state colleges of agriculture.

ARMY AND NAVY COMMITTEE ON WELFARE AND EDUCATION

On Feb. 12, the Secretaries of War and the Navy, with the approval of President Roosevelt, appointed the Joint Army and Navy Committee on Welfare and Education with Frederick H. Osborn as chairman. The Committee had three functions: first, to make available to the armed forces the advice of civilians whose experiences in special

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fields might be helpful in planning a leisure-time program; second, to serve as a liaison for the Army, Navy, Federal Security Agency, and public; and third, to keep the public informed of what is being done for the soldiers and sailors in their leisure time. Serving the Joint Committee was a sub-committee on education composed of leading educators of which Francis J. Brown served as executive secretary. This sub-committee was active during the year in making recommendations relative to the educational needs of the armed forces.

PARENT-TEACHER GROUPS AND WOMEN'S CLUBS

Parent-teacher groups and women's clubs extend their educational effort by informal study groups and other means into tens of thousands of our communities. The General Federation of Women's Clubs has adopted a national defense program which relates to agriculture, Americanization, aviation, conservation, consumer problems, housing, industry, nursing, nutrition, organization, recreation, registration for volunteer service, and assistance in selling U. S. bonds and stamps. The American Association of University Women in its program for the year stresses among other things, the status of women, the arts, our international relations, domestic affairs, education, and leadership training.

NATIONAL HOME STUDY COUNCIL

The National Home Study Council whose membership is composed of selected private home study schools has registered from 15% to 20% greater than in 1940, with trade and technical courses favored over commercial subjects.

SUMMARY

This statement must conclude by re-emphasizing the point made at its beginning, namely, the impossibility

of making adequate reference to the work of all agencies and media of adult education. Unmentioned are prison education; negro education (see *Negro Education*, p. 1000); the great growth of the forum movement; vocational guidance projects; the splendid local public school evening programs; the influence of the press, the movies and documentary films; the growing number of local and state adult education councils; the contribution of the regular sessions of men's service clubs such as Rotary, American Legion, and others; the extensive large corporation schools; publications and activities of the many semi-private agencies such as Twentieth Century Fund; the programs sponsored by the captains of our industries; and the Training-Within-Industry defense program sponsored by the Office of Production Management for industrial training. Unrelated also are accounts of projects, which might well be dramatically described such as that carried out by Superintendent of Schools, L. P. Hollis, in the mill town of Greenville, S. C. This significant example of the influence of a single man in a community self-help project is graphically described in the September, 1941 issue of *Reader's Digest*.

The outstanding need revealed by a study of all of this activity and substantiated by conclusions arrived at in the series of *Studies in the Social Significance of Adult Education*—27 in number, published by the American Association for Adult Education—is for the development of better materials and methods of adult education and the training of more competent leaders and workers. Meantime, there is no question but what realization of the fact has dawned that our contemporary scene is changing too rapidly for citizens of our democracy to rely on precepts and opinions learned in their teens. It is to be hoped that, as adult education becomes an established institution, it will not lose its informality.

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BY WILLIAM ANTHONY AERY
EDUCATOR AND WRITER

THE DISCRIMINATION ISSUE

On June 25, 1941, President Roosevelt issued an executive order affirming the policy of the United States against discrimination in the employment of workers in defense industries or government "because of race, creed, color, or national origin." The order declared that employers and labor organizations must provide for the full and equitable participation of all workers in defense industries. The President implemented this executive order by providing that all departments and agencies of the government concerned with vocational and training programs for defense should take special measures to assure that such programs would be administered without discrimination. The executive order also provided that contracts, negotiated after June 25, 1941, should provide against all forms of discrimination.

President Roosevelt established in the Office of Production Management a committee on fair-employment practice to receive and investigate complaints of discrimination and violations of his executive order relating to the employment and training of American Negroes for national defense. Mark Ethridge of the Louisville *Courier-Journal* was named chairman of this important committee. The result of the President's action was the employment of more Negroes in defense industries and a more generous attitude toward vocational training of Negroes for defense and war programs.

ARMY SEGREGATION

Negro leaders throughout the nation (*Journal of Negro Education*, October 1941) voiced objection to "the present intolerable treatment and position of the Negro soldier." These leaders were in agreement on the following proposition: "There is

absolutely no valid justification that Negro and white soldiers cannot and will not live and work together with reasonable amity, if they are let alone and are just treated like human beings . . . Where a policy of non-discrimination has been promulgated and the responsible authorities back it, there has been little or no inter-racial conflict."

Prof. Charles H. Thompson of Howard University proposed a three-part program: treat Negro soldiers like other soldiers; make general use of Negro morale officers and adjutants, where Negro units are staffed by white officers; and give up the idea that "the archaic mores of any local community" should determine Army policy. Negro leaders agreed with Professor Thompson that this program should also apply to the education of American Negroes. Segregation and discrimination, at every turn during 1941, affected the attitude of Negro masses and their leaders toward the major problems in which they and the government were deeply concerned.

AIRPORT TRAINING

Negroes, during 1941, became a part of the WPA nation-wide project for the training of airport servicemen which operated in 37 states and affected 550 persons at 51 airports. At Tuskegee Institute, Negroes were enrolled in groups for 90 days of intensive training. This was a completely new venture in the education of American Negroes which was supported by the Office of Production Management, Civil Aeronautics Administration, and U. S. Office of Education. Negroes who took this training course had to meet strict qualifications as to education, health, sight, hearing, and ability to meet the public. O. A. Burnside, a youthful and enthusiastic Negro, who had

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received his training at Syracuse, N. Y., was the WPA instructor in charge of the project at Tuskegee. His men learned to service airplanes and airplane equipment and to perform well many types of ground-service work. At Tuskegee the U. S. Army Air Force provided several airplanes. The CAA approved the Tuskegee Institute Airport as a site for the training of airport ground servicemen.

RACIAL MINORITY PROBLEMS

The tenth anniversary yearbook issue of the *Journal of Negro Education* (July 1941), edited by Prof. C. H. Thompson, covered the problems of "Racial Minorities in the Present International Crisis." Representative white and Negro scholars presented 29 valuable studies covering the various relations of the Negro population of some 14,000,000 to modern education and democratic defense. Among the Negro contributors were: R. W. Logan, D. A. Wilkerson, W. O. Brown, Eric Williams, and R. J. Bunche, Howard University; W. E. B. DuBois and Ira De A. Reid, Atlanta University; and Charles S. Johnson, Fisk University.

RURAL EDUCATION

Federal Study.—Dr. Ambrose Caliver, senior specialist in the education of Negroes in the U. S. Office of Education, in his monograph on "Supervision of the Education of Negroes as a Function of State Departments of Education," dealt with the origin and historical development, functions, and activities of the supervision of Negro education as observed in 16 of the 17 states having separate schools for Negroes and whites. Dr. Caliver's conclusions follow: "During the past quarter of a century great educational advances have been made among Negroes (mainly rural Negroes) in these items—availability of schools; buildings, equipment, and facilities; the organization and administration of schools; education of teachers; teachers' salaries; enroll-

ment and attendance; and improved quality of education."

State Agents.—Much of this progress was due to the excellent work of the state agents for Negro schools, of whom 26 are at work in Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, Missouri, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, and West Virginia with a developing program of general education. They are assisted by a vocational staff of 41—agriculture, 19; home economics, 11; and trades and industries, 11. In short, some 77 well trained men and women are engaged in improving Negro rural education in the South.

Supervision.—Dr. Caliver's excellent study suggests that parallel work could well be done to improve the education of American Negroes by city and country or parish units of educational administration. Then citizens, regardless of race, could expect to have an adequate supply of decent school buildings, as well as fair school terms, well-trained and well-paid teachers, curricula adapted to the needs of children, fewer retarded or average pupils, and a sharp decrease in pupil mortality (*Education Abstracts*, November 1941).

Georgia.—Mrs. Helen A. Whiting reported (*Journal of Negro Education*, October 1941) the progress that had been made, during the summer of 1941, by the cooperation of the Georgia State Department of Education with Negro leaders who are deeply concerned with curriculum-planning for rural Negroes which based on democratic relationships and which "will serve the needs of all the people" in the specific community in which an individual serves as a teacher or supervisor. For the past six years the Atlanta University Summer Session has promoted this type of curriculum study for the Negro rural teachers and leaders in the South and particularly for the benefit of rural Georgia Negroes. The workshop technique was applied to this form of study. The students who took the course in curriculum-plan-

ning at Atlanta University came to their summer work with the common purpose of planning a practical program "based on child needs, adult needs, and both the presence and lack of community resources." Accounts of teaching in the Negro schools of Georgia became source materials for finding the way to improving Negro rural education.

Teaching Materials.—Negro rural education greatly lagged until new teaching materials had been produced. During 1941 the U. S. Office of Education, through the work of Dr. Caliver, released important information on teaching materials adapted to use in Negro rural schools. In Alabama a four-year curriculum development program is under way and is helping to improve the technique of Negro rural teachers. Missouri and West Virginia have produced outlines and tests on knowledge of the life of Negroes and their contributions to American social life. The Louisiana Rural Normal School has produced a series of handbooks on elementary school subjects. The Tennessee Department of Education published a handbook *Program for the Improvement of Instruction*. The Division of Negro Education in Georgia published *The Open Road*, a teacher's study guide for child, adult, and community development in Negro rural schools. Texas published for its Negro rural teachers a handbook on observation and student-teaching, as well as a course in rural health problems, a course in library science and library economy for teachers and principals in small rural schools, and a bibliography of free and inexpensive materials dealing with the problems of rural life. Virginia, through the cooperation of eight counties and the City of Williamsburg, made a rural survey and published the findings—*A Study of the Negro in Virginia's Culture*—which showed the relationship between education and vocation, improvability and education, and social and economic status, as these relationships affect the education of Virginia Negroes.

ELEMENTARY EDUCATION IN NORTH CAROLINA

North Carolina for the year 1938-39 spent \$5,119,645.94 for instructional service in Negro schools (county units, \$3,321,281.96 and city units, \$1,748,363.98). The value of the Negro school property was \$14,615,423 compared with \$101,823,953 for white children. This state maintained 2,141 Negro schools (county, 1,915 and city, 226).

There were 27 accredited Negro elementary schools (white, 605); 837 one-teacher Negro schools (white, 312); 235,745 Negro children enrolled in elementary schools (white, 462,775); and 7,113 Negro principals and teachers (white, 18,257). The average annual salary paid Negro teachers was \$671.20 (white, \$933.80), while the average annual salary paid Negro principals was \$1,266.02 (white, \$1,667.14). The Negro school population was 348,209 (white, 773,703); the Negro school enrollment was 272,128 (white, 620,415); the Negro average daily attendance was 72.7 per cent (white, 76.7 per cent); and the average Negro school term was 164 (white, 164.2).

That progress is being made, year by year, in providing more and better education for North Carolina Negroes is shown in the report for 1940-41 (*State School Facts*, December 1941), when, as compared with an educational outlay of \$20,878,379.61 for white children, North Carolina spent \$6,023,845.30 for the education of its Negro population. The ratio of expenditure was as follows: Negro, 22.40 per cent, and white, 77.60 per cent. The improvement in the salaries paid to Negro elementary teachers was noticeable and encouraging.

SECONDARY EDUCATION

Development.—Eighty years ago secondary education for Negroes was practically non-existent; today there are over 350,000 Negro adolescents enjoying the benefits of secondary education in more than 2,500 schools scattered widely throughout the nation and increasing rapidly in the 15 Southern states where the dual school

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system is in operation. Dr. Frank T. Spaulding reviewed the growth of secondary education among American Negroes (*Journal of Negro Education*, October 1941) and pointed out that the "minority problem" had set education for Negroes apart from education for whites in this country. He emphasized the fact that in one sense the minority problem must be recognized as the problem of Negro schools, despite all other considerations. Dr. Spaulding suggested to Negro leaders that they develop their secondary schools as "community-service centers" and build new programs in direct and vital answer to existing social and economic needs of Negro adolescents and their families. He pleaded for a recognition of the capacities of Negro youth through the development of an adequate guidance program.

North Carolina.—The improvement of Negro secondary schools in North Carolina has been outstanding. The scope of this problem was outlined in some detail in *State School Facts*, September 1941. During 1938-39, there were 217 Negro high schools (white, 746); 153 Negro high schools were accredited (white, 713); 36,383 Negro boys and girls were in high schools (white, 157,640); there were 3,996 Negro high school graduates (white, 23,931); 844 Negro high school libraries (white, 1,769,983); 308 Negro schools were served by buses (white, 1,139); and 31,550 Negro children were transported (white, 284,771).

These figures give a picture of the stupendous task of furnishing opportunities of secondary education and the parallel problem of equalizing educational facilities for Negro adolescents.

Trends.—Dr. Ambrose Caliver in *Supervision of the Education of Negroes*, issued by U. S. Office of Education, cited Alabama and Mississippi as having made very unusual progress in giving Negroes secondary educational facilities: Alabama in 16 years progressed from four high schools for Negroes to 119, from 541 Negro high school pupils to 12,737, and from

nearly zero Negro high school teachers to 1,029; Mississippi, from one Negro high school to 117, from nearly zero Negro high school pupils to 8,802, and from nearly zero Negro high school teachers to 510. With these improvements in Negro secondary education there went numerous other educational improvements: Alabama, average annual salary of Negro teachers went from \$158.78 to \$393; Mississippi, from a negligible amount to \$215. In Alabama the length of the school terms in days went from less than 100 to 142.5; Mississippi, from 110 to 117.7. In Alabama the per pupil cost of instruction went from \$1.78 to \$11.23; Mississippi, from \$2.26 to \$4.93. Trends as well as conditions count in the education of American Negroes.

HIGHER EDUCATION

Enrollment.—During recent years colleges for Negroes have steadily increased their undergraduate enrollment at the rate of 3 per cent per year, until now it is nearly 40,000 students. In white institutions the annual increase in undergraduate enrollment is a little more than 1 per cent per year.

Prof. Martin D. Jenkins of Howard University presented (*Journal of Negro Education*, October 1941) statistics dealing with the enrollment of college students in 102 Negro institutions which received approximately 98 per cent of all Negroes working on the collegiate level. He also analyzed the enrollment of students in 12 Negro institutions which offer work on the graduate level. Of the 39,793 resident Negro undergraduate students, some 16,765 or 42.1 per cent were males and 23,028 or 57.9 per cent were females. Sixty-one Negro institutions reported a gain in undergraduate enrollment, while 32 institutions reported a slight loss.

The 37 publicly-supported higher institutions for Negroes reported a total enrollment of 19,583 students, and 65 privately-supported institutions reported 20,210 students. In A-rated institutions there were 19,920

or 50.1 per cent students; B-rated, 8,133 or 20.4 per cent; and non-accredited, 11,740 or 29.5 per cent. In 77 four-year institutions there were 36,003 or 90.5 per cent students and in less-than-four-year institutions there were 3,790 or 9.5 per cent students.

Graduates.—College graduates from Negro institutions have been coming into the nation's life in increasing numbers and have been called upon to serve in numerous fields other than teaching, preaching, and caring for those who are sick in body, mind, or estate. According to Professor Jenkins' study, the yearly crop of graduates from Negro institutions of collegiate rank is over 5,000 from the undergraduate divisions. Of these graduates, 38 per cent are males and 62 per cent females. The yearly increase in Negro college graduates has reached 4.4 per cent. Twenty-nine public institutions reported 2,676 graduates and 43 private institutions reported 2,598, or 50.7 per cent and 49.3 per cent, respectively. The distribution of Negro college graduates, according to the rating of institutions, is as follows: A-rated institutions, 2,817 or 53.4 per cent; B-rated, 1,190 or 22.6; and non-accredited, 1,267 or 24 per cent.

Graduate Schools.—There has been a rapid but healthy development of first-class graduate instruction for American Negroes. Professor Jenkins reported as follows on the statistics of Negro graduate schools: "Five years ago (about 1936) graduate instruction was offered in only five Negro institutions and all of these were under private control. During the school year 1940-41, 12 institutions, seven of them publicly controlled, offered (Negro men and women) graduate courses. . . . None of the institutions, however, as yet offers work beyond the master's degree. . . . The nine institutions which have graduate courses during the regular school year report a total of 713 graduate students . . . an attendance increase of 13 per cent over the preceding year. . . . Twelve institutions with summer sessions report 1,864

graduate students—an increase of 46 per cent over the preceding year."

On the graduate level in Negro institutions the distribution of enrollment by sex was as follows: males, 988; females, 1,589. Graduate degrees were awarded to 65 males and to 98 females. Of the 2,577 Negro students, 508 were enrolled in public institutions and 2,069 in private institutions. Public institutions granted 21 graduate degrees; private, 142. The one-to-four ratio was consistent throughout.

Federal Study.—President Roosevelt, on July 1, 1941, approved a law providing \$50,000 which will be spent, under the direction of the U. S. Office of Education, for the continuation of the study of higher education for American Negroes and areas of educational concentration or specialization upon which the several hundred colleges for Negro youth should embark without delay (*Journal of Negro Education*, October 1941).

Publicity.—On Dec. 13 and 14, 1941, the publicity directors from the leading Negro institutions of higher learning attended the first conference of the Public Relations Association of Negro Colleges held at the Virginia State College for Negroes, Petersburg, according to David Apter, director of public relations at Hampton Institute and president of the Association. White newswriters were also invited to this conference and spoke, according to William R. Simms, publicity director at Virginia State College. This Association was formed "to keep the public informed on the activities of American Negro colleges and universities . . . and to create a greater understanding of the aims, problems, and aspirations of Negro higher education."

FISK UNIVERSITY

Seventy-five years of work in the field of educating American Negroes is the fine record of Fisk University at Nashville, Tenn., which celebrated the founding event from April 29 through May 4, 1941 (*School and Society*, Aug. 30, 1941). The anniversary program included Negro folk

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music, a conference on employment, and a discussion of timely topics, including "Education as a Cultural Process," "The Status of Religion in Negro Colleges," and "Minority Groups of America."

John D. Rockefeller, Jr., referred to the mutually advantageous relations with Melarry Medical College; the development of graduate work in nine departments, with a student increase from two to 76; and the 4,267 Fisk graduates. Other speakers included President Frank Graham of the University of North Carolina and Chancellor O. C. Carmichael of Vanderbilt University.

HAMPTON INSTITUTE

President Malcolm S. MacLean, at the opening of the 1941-42 term (Newport News, Va., *Daily Press*, Sept. 30, 1941), said: "Hampton Institute, any college, has no excuse for the things it does, except as those things help its students to be better workers, able to take better jobs and hold on to them, get more wages from their jobs, and live better, happier lives." With this idea of education before him, President MacLean announced that he had brought new teacher teammates, who, because of their past records and personality, could be depended upon to play the game at Hampton.

The institute released a 45-minute color film on "Hampton's Program of Education for Life" which had been produced for the Harmon Foundation of New York by Mr. and Mrs. Ray Garner, nationally known for their educational photography.

President MacLean announced the dropping of 150 students. He also announced the introduction of a new personnel service, a new communications center for the modern teaching of both oral and written English, and a new program of individualized curricula for some students. He outlined, too, a science course that could be made a vital part of living, when applied to the needs of each individual.

YOUTH CONFERENCE

The National Association for the

Advancement of Colored People (New York) held its third youth conference at Hampton Institute (Newport News, Va., *Daily Press*, Nov. 2, 1941), which was attended by 125 representatives of 25 Negro colleges and 30 youth organizations. Current Negro youth problems were discussed. Dr. Edward C. Lindeman of the New York School of Social Work delivered the keynote address dealing with the pressing needs in the world situation and the relation of democracy to the present world conflict. He urged the strengthening of American democracy during the war period and expressed earnest concern for world organization "when peace breaks out."

President MacLean said: "The only hope of advancement for the Negro lies in higher education, in which there must be a fuller degree of co-operation and a lessening of institutional rivalry." He indicated that there never would be enough money or staff to do the job that needs to be done in Negro colleges and that institutional rivalry would tend to increase rather than relieve the problem of higher education for Negroes.

W. Howard Ming of the Howard University Law School and Dr. Howard Lane of Northwestern University, who served as visiting professor at Hampton Institute, headed a student panel discussion of civil liberties.

The N.A.A.C.P. conference call to college Negro youth stated: "Students are playing a role in increasing importance in the world drama today. The problems of Negro student youth are not isolated. We have felt, particularly, the increased pressure of discrimination, race hatred, prejudice and segregation—all accentuated by the hysteria of crisis. What affects us is necessarily the concern of all youth . . . Civilized people all over the world are appraising what the future may hold for them."

TUSKEGEE INSTITUTE

Visit of Henry Ford.—Late in March 1941, Henry Ford visited Tuskegee and took part in the dedication of the George Washington Carver Museum by the insertion of

plastics made of soy beans and soy fibre. Mr. Ford also visited the Tuskegee Institute Airport where advanced training is being carried on for Negroes who are interested in making a career in aviation. Mrs. Ford inspected the girls' industrial building and home-economics department. Later, both Mr. and Mrs. Ford visited the nearby Veterans Hospital which is Negro staffed.

Orientation.—Dr. I. A. Derbigny, administrative dean at Tuskegee, prepared an outline of "Vocational Orientation among Tuskegee Freshmen" (*Journal of Negro Education*, October 1941). His study covered 300 members of the class of 1943. He found that students came to Tuskegee to obtain occupational preparation, general education, training for community responsibility, training beyond that of parents (because parents desired this), guidance to a wise vocational choice, and a higher salary. At Tuskegee nearly 90 per cent of the freshmen, at the close of the year, had made a vocational choice "with some degree of certainty." In general these Negro students made their own decisions. Other elements were as follows: advice of parents, general reading, advice of college instructors, college work and experience, and advice of counselors.

TEACHER EDUCATION PROGRAM

The voice of American Negro teachers is heard through the American Teachers Association which met at the West Virginia State College for Negroes, during the week ended Aug. 1. The Association issued the following working program: "Each State should be encouraged and aided in providing educational opportunity for Negro citizens, including vocational training, guidance, apprenticeship education, trade and technical education, recreation and playgrounds, nursery and pre-school education, university training, and other fields of specialized training. This desirable end is possible and may be reached in full accord with State autonomy" (*School and Society*, Oct. 4, 1941).

TEACHERS' SALARIES

Underlying the problem of providing for teachers equal-pay-for-equal-service is the basic principle that, as teachers prepare themselves professionally and specifically for their public service, they deserve compensation on the basis of their fitness and efficiency in teaching rather than on the basis of race or group membership.

American Negro teachers throughout the nation and particularly throughout the South have grown conscious of salary discrimination and have taken steps during the past few years to have the courts pass on their claims for salary equalization. Many white Southern leaders have come to recognize the just claims of Negro teachers for more democratic treatment in salary payment.

During 1941 several suits for equalization of Negro teachers' salaries were begun. In New Orleans Parish, La. a suit was brought by a Negro teacher on behalf of all other Negro teachers. This suit was met by a motion on the part of the board of education to extend the time of answer. In Escambia, Florida, the principal of a Negro high school brought action for himself and other Negro teachers, but was overruled. The local board, however, instituted negotiations with its Negro teachers, and expressed a desire to arrive at an amicable settlement of the salary dispute. In Chattanooga and Nashville, as well as in Louisville, Negro teachers brought court actions for salary equalization.

Leon A. Ransom (*Journal of Negro Education*, October 1941) quoted the following figures on Southern teachers' salaries which were cited by Dr. Will W. Alexander, assistant to the Federal Security Administrator, in his testimony before a Congressional committee which met on April 28, 29, and 30, 1941, to discuss financial aid for the education of Negroes: Alabama: Average annual salary paid to a Negro teacher, \$393 (white, \$827). Arkansas: Negro \$367 (white, \$620). Florida: Negro \$540 (white, \$1146). Georgia: Negro \$352 (white,

NEGRO EDUCATION

\$876). Mississippi: Negro, \$215 (white, \$630). South Carolina: Negro, \$373 (white, \$943). Louisiana: Negro, \$499 (white, \$1165). With the low salaries paid to Negro teachers there is also the corresponding small per-capita outlay for Negro school children, according to Dr. Alexander. Some examples follow: Alabama, \$14.05 (white, \$44.41); Arkansas, \$13.55 (white, \$37.24); Florida, \$27.68 (white, \$71.20); Mississippi, \$6.67 (white, \$47.28); and South Carolina, \$12.99 (white, \$54.53).

NEGRO ADULT EDUCATION

Baltimore.—Throughout the nation, chiefly on account of the general and increased interest of Negroes in preparing themselves adequately to take part in defense work, there was during 1941 a vigorous campaign to set up classes for adults. The Douglass Evening High School of Baltimore offered courses to provide Negro men and women with instruction to supplement their secondary academic program or their vocational training; to help individuals regain the skills and knowledge developed during their youth; to help individuals relate their academic and vocational experiences; to develop interest in informational reading; and to provide more first-hand knowledge of child problems (*Baltimore Bulletin of Education*, September-October 1941). Adult Negroes of Baltimore were thus given the opportunity of fitting into an academic curriculum that covered the full four-year program, as well as a comprehensive vocational program for improving their earning power. At the Douglass School a full-time counselor was provided. The enrollment over a five-year period has been 1,538. There were 633 students who completed the full six-year requirements and were graduated.

Virginia.—Dr. Edna M. Colson, head of the division of the Virginia State College for Negroes (*Norfolk Journal and Guide*, March 22, 1941) outlined a program of adult-education study which was sponsored by the college's inter-fraternity counsel. Students majoring in education were

encouraged to take part in a series of seminar discussions dealing with Negro adult education. Samuel A. Madden, supervisor of Negro adult education for the WPA in Virginia, was the visiting lecturer for the six seminar discussions dealing with the basic facts concerning adults, normal and handicapped, especially their urban and rural educational needs. These discussions were supplemented by exhibits, visual and graphic presentations of information, and by addresses presented by leaders in the Negro Organization Society of Virginia, National Association for the Advancement of Colored People, National Youth Administration, and other agencies engaged in working with Negroes who deal at first hand with community problems and community betterment.

SOCIAL SCIENCE

The sixth annual conference of the Association of Social Science Teachers in Negro Colleges met in Petersburg, Va., on March 22, 1941, and held several meetings at the Virginia State College for Negroes which was presided over by Dr. John W. Gandy. This conference is limited in its membership to persons in the fields of history, government, economics, and sociology. The membership has always included outstanding Negro scholars and teachers.

The papers and discussions covered the following topics: "Effect of War on Democratic Institutions" by Dr. Harry W. Roberts, Virginia State College; "National Defense: A Challenge to the Classroom Techniques of the Social Scientists" by Dr. R. G. Higgins, Agricultural and Technical College, Greensboro, N. C.; "The Role of Courts in Biracial Accommodation" by Dr. Henry J. McGuinn, Virginia Union University, Richmond, Va.; "Taxable Wages of Southern Negro Workers" by Dr. Charles L. Franklin, Social Security Board, Washington, D. C.; "Pressure Politics" by Dr. Rayford Logan, Howard University.

From year to year an increasing amount of original research is under-

taken and completed by Negro scholars. Several of the papers read at the Virginia conference were published in full (*Quarterly Review of Higher Education Among Negroes*, April 1941).

NEGRO HISTORY WEEK

In 1926 Dr. Carter G. Woodson, Washington, D. C., founder and director of the Association for the Study of Negro History and Life, inaugurated "Negro History Week." Year by year there has been a vast increase in attention given to this observance. Dr. Woodson has conceived for 1942 the idea of a "Negro History Year." He expressed the belief (*School and Society*, Nov. 22, 1941) that many schools have undertaken to offer courses in Negro history because men and women are "learning to think of civilization as the heritage of the centuries to which all races have made some contribution."

During the 1941 observance of Negro History Week, Dr. Woodson emphasized the thought that the Negro had not only supplied the demand for labor of a large area of the United States, but also had served as a valuable conservative force in recent American economic development. He also referred to the contributions that Negroes had made to American poetry, music, and art.

Marie Elizabeth Carpenter published an excellent book, *The Treatment of the Negro in American History School Textbooks*, which Prof. Charles H. Wesley reviewed (*Journal of Negro Education*, October 1941). This book deserves to be read along with *The Myth of the Negro Past*, written by Neville J. Herskovits.

WPA PROGRAMS

School Lunches.—From March through June, 1941, the WPA school lunch projects reported that 9,225,000 free school lunches had been served to Negro children, out of a total of 73,986,335. These projects also provided in-service training for many workers who were interested in elementary nutrition and other branches of domestic service. James A. Atkins,

acting consultant on race relations for this WPA program, stated that South Carolina and Texas had reported the serving of more than 1,000,000 free school lunches to Negro children within their borders; Georgia, 739,436; North Carolina, Oklahoma, and Florida, 500,000 each; District of Columbia, 340,000; Illinois, 340,119; Virginia, 318,199; California, 317,389; West Virginia, Ohio, Missouri, and Arkansas, between 136,000 and 160,000 each. From Mississippi and Indiana came reports covering 70,000 lunches each for needy Negro children; New Jersey, 94,571; Alabama, 86,879. Somewhat less than 50,000 meals were served Negro children in each of the following states: Arizona, Kansas, Kentucky, Louisiana, Maryland, Massachusetts, Michigan, and Pennsylvania. New York State topped the list with 1,459,958 free lunches for Negro children.

Negro Women.—WPA ministered to Negro women during 1941 by preparing them to engage in defense employment. Some 90,000 Negro women gained training and experience through WPA projects, and enrolled in vocational courses so as to qualify themselves to engage in industries vital to American defense efforts. These vocationally trained women secured jobs in numerous industries commonly closed to them: metal foundries, plants manufacturing electrical goods, optical equipment shops, sheet-metal departments, gas-mask assembly plants, press and punch-press shops. One young Negro woman, given an opportunity through the WPA program, is engaged in primary, intermediate, and advanced flight instruction.

Public Activities.—During 1941 there were at least seven phases of the WPA public-activities program. Courses were organized for Negroes to provide them with general education, the means of reducing illiteracy, the improvement of family life, and the opportunity of nursery-education facilities. Young Negro women were trained in child care. Older women were given instruction in food conservation, home hygiene, first aid,

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health, and citizenship. Negro teachers were given in-service training. The workers' service program provided leadership for group discussion and study of social labor legislation, the cost of living, housing, consumer problems, and national questions. The library service provided book-mobiles, chiefly in rural areas; in-service training for WPA library workers; and assistance in overpopulated industrial areas.

WPA writers' program resulted in the publication of some 18 books dealing with the life and achievements of American Negroes. In the field of recreation, the WPA provided timely and interesting programs for all age groups. In art, the WPA program covered decoration, sculpture, painting, arts and crafts work, and art of camouflage. Members of WPA art classes placed at the disposal of civil-defense organizations such items as scenery and back-drops, as well as silhouettes of military aircraft. They also made equipment for occupational therapy in hospitals and field altars for religious services. In music, the WPA provided free, public orchestral and choral performances, especially for recruiting rallies and for the maintenance of morale in industrial areas. Music workers were provided with in-service training.

Adult Education.—There were during 1941 some 165,000 Negroes enrolled in WPA adult-education classes (out of a total enrollment of 748,538 students), distributed as follows: vocational training, 13,950; literacy, 64,273; naturalization, 1,156; homemaking and parent education, 23,314; other classes, 61,393. The enrollment by states was as follows: Alabama, 19,142; Texas, 14,078; Louisiana, 12,642; Ohio, 9,467; and Illinois, 7,721. Other states reporting enrollments from 5,000 to 7,500 were Georgia, Tennessee, Arkansas, Missouri, Virginia, Mississippi, Michigan, Indiana, Pennsylvania, and North Carolina. New York City reported 4,204 Negro students in the adult-education classes. California had 2,662 and the District of Columbia, 1,835.

Community Service.—Miss Jane

E. Hunter, founder and executive secretary of the Phyllis Wheatley Association of Cleveland, O., reported early in October 1941 on the activities of the WPA community-service program, which includes the provision of free school lunches, work in gardening and canning, classes in sewing, and public-health assistance. This WPA program of education for Negroes expresses the group judgment of white and Negro leaders and was organized in the spring of 1940 by Mrs. Florence Kerr. Miss Hunter has been particularly concerned with WPA activities that closely affect the lives of Negroes in urban and rural communities. The WPA also cooperated with the Historical Records Survey, authorized by President Roosevelt in September 1939, in preparing the first national directory of Negro Baptist bodies—over 15,000 churches, state conventions, and associations.

PUBLICATIONS

Throughout 1941 the growing interest of the American nation in the problems that relate to the education of Negroes was reflected in the books, bulletins, pamphlets, monographs, and magazine articles that appeared in this field. *The Journal of Negro Education* for October 1941 brought its bibliography to 1,065 titles.

The following books should prove interesting and helpful to students who are ready to face realistically the problem of giving American Negroes a fair chance in a democracy that is at war with totalitarianism: *12 Million Black Voices*, Richard Wright; *Growing Up in the Black Belt*, Charles S. Johnson; *Color, Class, and Personality*, Robert L. Sutherland; *Children of Bondage*, Allison Davis and John Dollard; *In a Minor Key*, Iran De A. Reid; *Color and Human Nature*, W. L. Warner, B. H. Junker, and W. A. Adams; *Thus Be Their Destiny*, H. T. Atwood, D. W. Wyatt, V. J. Davis, and J. D. Walker; *Negro Youth at the Crossways*, E. Franklin Frazier; *Drums and Shadows*, Georgia Writers' Project; *Deep*

South, Allison Davis, B. B. Gardner, | *cation and the Negro*, Malcolm S. and Mary R. Gardner; *Higher Edu-* | MacLean.

LIBRARIES

BY OLGA M. PETERSON
AMERICAN LIBRARY ASSOCIATION

DEFENSE ACTIVITIES

Most conspicuous among American library activities during 1941 were those occasioned by the national defense emergency program. Almost every library reported increased demand for books on industrial topics, democracy, other systems of government, and the war. Libraries in areas where industries have undergone sharp expansion became acutely aware that normal book supply could not meet the demand. Skilled and unskilled workmen, research workers and engineers, designers and managers needed books, and the immediacy of their need created a critical problem for the libraries. School and public libraries sought, with only slight success, Federal funds to augment their own appropriations. Fuller information will be found under Federal Relations in this article.

Besides trying to meet awakened interest in current affairs, libraries regarded this increase in intelligent citizen concern as a challenge. In many parts of the country, they are providing opportunity for open discussion based on reading, expanding their service of individualized reading guidance, and encouraging interest through exhibits and booklists. The Council of the American Library Association issued a statement, "The Library—1941," which reads in part:

"The wars now being waged are not merely against nations and races. They have as their aim the destruction of ideas as well, even in those countries not engaged in military combat. . . . Libraries are inevitably involved in this war of ideas.

"Unusual opportunities exist to increase understanding of what democracy is; what its achievements and failures have been; and above all

what its future can be if it again becomes, in the minds of all, not something achieved but a way of making life what we wish it to be. Reading should be encouraged and facilitated, not only on democracy, but on other ideologies. Propaganda against democracy should not be feared and avoided but confronted with evidence and informed interpretation."

Libraries in camps and army hospitals have been established under the Morale Division of the U.S. Army, and a book fund of \$400,000 was appropriated for this purpose. Technical libraries for the Army Air Corps are under separate organization. Libraries at naval stations and on ships have been in operation for several years, but have undergone marked expansion. A national book drive to supplement the resources of the Army and Navy was organized late in 1941 by the American Library Association, United Service Organizations, and American Red Cross, under the direction of Miss Althea Warren, librarian of the Los Angeles Public Library.

FEDERAL RELATIONS

Bills introduced into Congress, which contained enabling legislation for Federal aid to libraries, were the Harrison-Thomas Bill, the Lanham Bill, its successor, H.R. 4545 and H.R. 4926. Efforts to have libraries specifically included in the Lanham Bill and in H.R. 4545 (for community facilities in defense areas) were ably supported by Charles P. Taft, Assistant Coordinator of Health and Welfare, but proved unsuccessful. The U.S. Office of Education attempted to include library service in H.R. 4926, the appropriation bill for the Department of Labor, Federal Security Agency and Related Independent

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Agencies, but the item was not approved by the U.S. Bureau of the Budget. This marks a step forward in Federal aid, however, since it constitutes the first formal request by the Office of Education for an appropriation for public library service, as part of its request budget.

Interpretations of H.R. 4545 and H.R. 4926 were secured from the Commissioner of Education, permitting expenditures for books in vocational schools and in public libraries serving industrial centers. Requests must be approved and transmitted through state departments of education.

The Office of Education has encouraged library service in many other ways. The Commissioner sponsored a study of public library defense needs early in 1941, and formed an Advisory Committee on Public Libraries to consider and approve results. The Library Division of the Office of Education has effectively

aided the coordination of library service and national activities.

STATE DEVELOPMENTS

Progress in library extension continued in 1941 in spite of constantly increasing emphasis on the needs of the national defense program. Equalization of library service increases in importance because of the conflict of ideas involved in present-day warfare.

Exact figures of people, with and without public library service under the 1940 census, are now in preparation for publication early in 1942. Approximately one-third of the population have good public libraries, one-third have inadequate service, and one-third have no convenient libraries.

In state aid, more legislative progress was made than in any previous year. States making special appropriations for establishment and maintenance of public library service were:

Arkansas.....	\$120,000 for 1941-43	Increase, \$20,000
British Columbia.....	\$5,000 for 1941-43	Continued
Louisiana.....	\$200,760 for 1940-42	Increase, \$760
Michigan.....	\$500,000 for 1941-43	Restored after lapse
North Carolina.....	\$200,000 for 1941-43	New appropriation
Nova Scotia.....	Funds on a matching basis	Continued
Ohio.....	\$100,000 for 1941-42	Continued
Pennsylvania.....	\$55,000 for 1941-43	Increase, \$15,000
Vermont.....	\$48,000 for 1941-43	Increase, \$6,000

Regional library service shows definite progress. Massachusetts, Vermont, and New Hampshire have bookmobile services that cover large areas. Libraries to serve the Cherokee Dam area in Tennessee (Jefferson, Grainger, Hamblen, and Hawkins counties) constitute the fifth regional library demonstration organized by the Tennessee Valley Authority and operated under contract with an established local library agency. W.P.A. demonstrations are responsible for regional service in Georgia. Official W.P.A. figures in April 1941 show 41 state-wide library projects now in operation. Louisiana, Virginia, California, British Columbia, Prince Edward Island, and the British West Indies provide library service on the regional plan in all or part of their territory. (For fuller information see *A.L.A. Bulletin* 24:547-550, Oct. 15, 1941.)

Complete figures on state aid to school libraries have not been compiled. Georgia appropriated \$203,000 for 1940-41 and \$100,000 for 1941-42, on a matching basis; Louisiana, \$35,000 for 1941-42; Virginia, \$100,000 per year for 1940-41 and 1941-42, on a matching basis; Tennessee, \$60,000 for 1940-41, on a matching basis. Vocational schools and secondary schools with industrial training courses are receiving, in a few cases, Federal funds for the purchase of technical books.

SERVICE OF ESTABLISHED LIBRARIES

Basic statistics on libraries published in *THE AMERICAN YEAR BOOK* 1939, "Libraries" are the latest available as this goes to press, but 1941 figures will be published early in 1942. The February number of the *A.L.A. Bulletin*, 1941 carried a tabulation of

college and school library statistics for 1940, and a similar tabulation for public libraries appeared in the April number. Percentages showing the fraction of population served by an individual public library are not comparable to those appearing in *THE AMERICAN YEAR BOOK, 1940* because 1940 percentages were based on the U.S. census for that year, while 1939 figures were calculated on census data compiled in 1930. The increase in population in cities from 100,000-199,999 has lowered the median per cent of population registered from 29.33 to 27.96. This does not indicate a drop in library membership.

Statistics of library income per capita show that, among 89 libraries serving populations of more than 100,000, only eight meet the minimum desirable for good service, as prescribed by the American Library Association. These are Bridgeport, Conn., Cleveland, O., Fort Wayne, Ind., Newark, N.J., Pittsburgh (Old City), Penn., Providence, R.I., Rochester, N.Y., and Toledo, O.

ADULT EDUCATION

Increased interest in world affairs has given considerable impetus to adult education in libraries. Emphasis was placed during the year on integration of the library's adult education program with those of other community agencies, and on group consideration of democratic principles, American social and economic problems. A new form of adult education was the film forum, an attempt to coordinate learning through films, books, and discussion. The American Library Association, American Association for Adult Education, American Film Center, and American Association for Applied Psychology sponsored a series of experimental forums in several libraries. Films were used to present problems and stimulate discussion. Books were used to give background for the films and follow up the interest aroused by them.

The A.L.A. Adult Education Board formulated six broad objectives for libraries to accomplish: (1) improvement of the means of communicating

knowledge; (2) creation of opportunity to help all people become more active and informed citizens; (3) strengthening of group activity within the community; (4) strengthening of a basic social unit, the family; (5) provision of library facilities for two large, important groups—labor and rural dwellers; (6) remodeling of library adult education practice to fit changing conditions.

SURVEYS AND STUDIES

Surveys of library needs related to defense were based on data gathered by the American Library Association from representative libraries all over the country, and were summarized in four reports: (1) *Use of Library Materials in Vocational or Trade Training at Lower Levels*, by R. Russell Munn; (2) *Public Library Service and Needs*, by R. Russell Munn; (3) *Study of Defense Activities of College and University Libraries*, by a committee of the Association of College and Reference Libraries, Charles M. Mohrhardt, chairman; (4) *Study of Book Needs*, by Walter H. Kaiser.

Robert Downs, chairman of the Committee on Library Resources for National Defense, appointed by the American Library Association, Special Libraries Association, Library of Congress and U.S. Office of Education, edited *Guide to Library Facilities for National Defense* which has been published in a revised edition.

Surveys regarding resources of American libraries which are being continued by the A.L.A. Board on Resources of American Libraries include a study of regional union catalogs in the United States and a survey of the resources of New York City. The second annual report on notable acquisitions to American libraries, covering the period July 1, 1939 to June 30, 1940, was completed and was published in the *Library Quarterly* (XI: 257-301, July 1941). The Union Catalog of the Library of Congress is making successful progress in centralizing information concerning the availability of American research materials.

Library periodicals during the year

published reports of research in the college library field: "Principles and Standards for Surveying a College Library," by Peyton Hurt (*College and Research Libraries* 2:110-117, March 1941); "Significant Influences on General Circulation in a Small College Library," by Russell I. Thompson and John B. Nicholson (*Library Quarterly* XI:142-185, April 1941).

Articles on technical developments were: "Library Table Lighting," by J. O. Kraehenbuhl (*College and Research Libraries* 2:306-317, September 1941); "Recent Developments in Microfilming," by D. F. Noll (*Journal of Documentary Reproduction* 4:109-118, June 1941).

A study of fictional treatment of the subject of adolescence appeared in "Youth Through the Modern Novel," by Alice Vielehr (*Library Journal* 66:767-770, Sept. 15, 1941), and a study of influences on circulation figures in "Workers and Readers: the Correlation Between Economic Trends and Library Statistics in Bridgeport, Connecticut," by Julian Sohon (*Library Quarterly* XI:334-356, July 1941).

LIBRARY TRAINING AND PERSONNEL

A grant from the Carnegie Corporation of New York made possible the establishment of a library school for Negroes at Atlanta University. The University of Chicago, Emory University, and Peabody College for Teachers received grants from various sources for the expansion of library school programs. The Board of Education for Librarianship of the American Library Association received \$5,000 from the Carnegie Corporation of New York for further investigations of problems in library education.

New courses were offered at the library schools of Louisiana State University, Drexel Institute of Technology, New Jersey College for Women, George Peabody College for Teachers, and Pratt Institute. Beginning in 1941, the first year curriculum at Simmons College and University of Michigan may be completed in

summer sessions. The library school of Kansas State Teachers' College of Emporia opened a new summer course for teacher-librarians which is distinct from the curriculum given in the regular year. The University of Illinois and University of Michigan are helping to coordinate the library training programs given by all institutions in their states. Under the leadership of the state supervisor of school libraries, institutions of higher education in Georgia tried out a curriculum for teacher-librarians. About 1,500 students were graduated from accredited library schools during 1941, and of these, approximately 100 received degrees for more than one year of graduate study.

Changes in directorship of the library schools occurred at the University of Illinois, Louisiana State University, University of Michigan, and University of Wisconsin. There was greater turnover in library personnel during 1941 than in any year in the last decade, due primarily to the national emergency. Not only have men been taken into the armed forces, but personnel has been required for camp and corps area librarianships and library posts in defense industries.

GIFTS, GRANTS AND BUILDINGS

During 1941, the American Library Association continued to administer funds provided by the Carnegie Corporation for defense activities and for aid to libraries in war areas. Development of Latin American relations in the library field progresses with the financial aid of the Rockefeller Foundation. The Carnegie Corporation continues to advance library service in individual institutions; one of the largest grants of the year, \$100,000, is devoted to the development of libraries in colleges for Negroes, through the purchase of books.

Gifts of unusually valuable private collections were made during the year. The Boston Public Library received the Mathematics and Mathematical Physics Library, numbering several hundred volumes, given to the Library by Paul S. Bauer in memory of

his father. The collection of Americana accumulated by Judge E. E. Robinson of San Francisco was given to Stanford University Library. The collection includes a large group of Colonial and Revolutionary newspapers. The Donald R. Dickey Library of Vertebrate Zoology, numbering 10,000 volumes, was presented to the University of California by the explorer's widow. The New York Public Library received the Beethoven Association's collection of music, pictures, manuscripts, musical instruments and contract rights, as well as the residue of its funds. One of the finest and most valuable Conrad collections in existence went to Dartmouth College Library as the gift of George Matthew Adams. A collection of the works of Sarah Orne Jewett and the bulk of the estate of Jane Burbank were left to the Public Library of Portland, Me.

Gifts for library buildings include a children's library for Palo Alto, Calif., provided by Mrs. Lucie Stern. A \$2,000,000 trust fund was established for the Linda Hall Library at the University of Kansas City. Henry Edwin Sever left \$110,000 to the public library of Kahoka, Mo. of which \$100,000 must be spent on a library building. The sum of \$37,000 for a memorial library building in Liberty, Mo. was provided in the will of Frank Hughes. A pair of chromium plated bronze doors, valued at \$1,500, were given to the Miami Beach Public Library in memory of Edwin Mc-Masters Lee.

The Ingersoll Memorial Building of the Brooklyn Public Library, begun in 1912 and rebuilt in 1938-39 at a cost of about \$5,000,000, was finished in 1941. Other new buildings completed during the year were Harvard University's new library to house rare books, Pennsylvania State College Library, Howard-Tilton Memorial Library at Tulane University, Georgia State Women's College Library, Hood College Library, Joint University Libraries at Nashville, Tenn. and public libraries of White Plains, N. Y., Jacksonville, Fla., Passaic, N.J., and Glencoe, Ill.

AMERICAN LIBRARY ASSOCIATION

The officers of the Association for the year 1941-42 are: president, Charles H. Brown, Ames, Iowa; vice-president and president-elect, Keyes D. Metcalf, Cambridge, Mass.; second vice-president, Matthew S. Dodgeon, Milwaukee, Wis.; treasurer, Rudolph H. Gjelsness, Ann Arbor, Mich. The executive secretary is Carl H. Milam, and the Association maintains headquarters at 520 N. Michigan Avenue, Chicago. Sixteen thousand librarians, library trustees, and individuals interested in library service are members of A.L.A. which was organized in 1876 to promote the foundation and improvement of libraries in the United States and Canada.

The Association holds two conferences each year; the annual conference which met in Boston, June 19-25, 1941, and the midwinter conference, which convenes each year in Chicago. The major topics discussed at the midwinter meeting, Dec. 27-30, 1940, were Federal aid, defense activities of libraries, and a proposed code dealing with the reproduction of printed and manuscript material. The A.L.A. Council emphasized the important position libraries occupy in moral and military preparedness by adopting a statement of policy, "The Library—1941," which has already been quoted in part and which appears in full in the *A.L.A. Bulletin* (35:5, 45, 50, January, 1941).

Cultural relations with Latin America and Canada, state aid to libraries, rural library service, emergency activities in libraries, and reorganization of the Association were topics of interest at the Boston conference. For the first time two library trustees were officially cited by the Association for their service to American libraries. William E. Marcus, trustee of the Montclair Public Library, Montclair, N.J. was honored for his significant writings in the library field, and Rush Burton, newspaper editor of Lavonia, Ga. for his work in the extension of library service in his state.

Armstrong Sperry won the annual Newbery Medal for *Call It Courage*,

judged the best contribution to children's literature published during the previous year. The Caldecott Medal for the most distinguished picture book of the year was awarded to *They Were Strong and Good*, by Robert Lawson. *Reading with Children*, by Anne Eaton, was voted the best piece of professional writing, and thereby won the James Terry White Prize.

Numerous inquiries from libraries and other sources about the possibility of a national book drive for army and navy libraries resulted in the formulation of a statement which opened the way for negotiations with other possible sponsors. Late in the fall of 1941, the American Library Association, United Service Organization, and American Red Cross cooperated in organizing a National Defense Book Campaign, which is expected to produce 5,000,000 to 10,000,000 books for men in the armed services and for families in defense centers.

The Association's income in 1940-41 (excluding cash balances which were \$45,160 on Sept. 1, 1940) was \$369,240. Revenues from membership dues, conference income, sale of publications, advertising, subscriptions, etc., were about \$194,720; grants for specific purposes amounted to \$98,900, and \$75,620 was derived from endowments. The Association endowment is now approximately \$2,152,000.

International activities of the Association continued. In spite of obvious and to some extent increasing difficulties in maintaining contact with European countries, 16 different locations received \$17,890 worth of books from the United States. The books were sent under the terms of the A.L.A. Books for Europe Project, financed by the Rockefeller Foundation (*A.L.A. Bulletin* 35:64-66, February 1941). During the year, the Foundation authorized a liberalization of the program, to make funds available for Canada and Greenland as well as for Europe. Occasional shipments continue to China for the libraries of transplanted Chinese colleges and universities.

The delivery of foreign books and periodicals, intended for libraries in the United States, has been interrupted by transportation difficulties and customs regulations, either in this country or abroad. Arrangements have been made to establish storage centers on the continent, where research materials may be stored until after the war. A committee on importations is investigating the possibility of arriving at agreements with the American and British governments, to insure shipment of material detained at Bermuda.

The American staff of the American Library in Paris has returned to this country, and the Library is operating at present under the guidance of the Comtesse de Chambrun, a member of the Board of Trustees.

Several studies of importance to library relations between the United States and Latin America have been completed. Problems studied were practices in the exchange of research material between institutions in the two continents; the distribution of United States publications in Latin America and of Latin American source material in this country. The American Library Association established the Benjamin Franklin Library in Mexico City, opened in January, 1942. This is the first public library, financed and directed by an American agency, in a Latin American country. It will serve as a center of cultural materials from the United States.

PUBLICATIONS

Two Spanish texts in the library field were issued by the American Library Association during the year: *Introducción a la Práctica Bibliotecaria en los Estados Unidos*, by Marion Carnovsky, and *La Biblioteca Pública en los Estados Unidos*, based on an earlier publication by Arthur E. Bostwick. Other publications are *Teacher-Librarian's Handbook*, by Mary P. Douglas; *Subject Index to Poetry*, by Herbert Bruncken; *Library Discount Control*, by Oscar Orman; *Principles of College Library Administration*, by William M. Randall and F. L. D. Goodrich and *Catalogers' and Clas-*

sifiers' Yearbook No. 9. The Association continues to issue six periodicals; *A.L.A. Bulletin*, *Booklist*, *College and Research Libraries*; *Journal of Documentary Reproduction*; *Hospital Book Guide*, and *Subscription Books Bulletin*.

Other publishers produced *School*

Library Service in the U.S., by A. L. Cecil and W. A. Heaps; *American Public Library Buildings*, by Joseph Wheeler and Alfred Githens; *Library Costs and Budgets*, by Emma V. Baldwin and W. E. Marcus; and *The Bookman's Manual*, by Bessie Gramham.

PERIODICAL PUBLICATIONS

American Teacher

506 South Wabash Ave., Chicago.

Business Education World

270 Madison Ave., New York City.

Child Study

221 West 57th Street, New York City.

Education

370 Atlantic Ave., Boston.

Educational Method

1201 Sixteenth Street, N.W., Washington, D.C.

Educational Record

744 Jackson Place, Washington, D.C.

Industrial Arts and Vocational Education

407 E. Michigan Street, Milwaukee, Wis.

International Journal of Religious Education

203 North Wabash Ave., Chicago.

Journal of Adult Education

60 East 42nd Street, New York City.

Journal of Business Education

512 Brooks Building, Wilkesbarre, Pa.

Journal of Education

6 Park Street, Boston.

Journal of Educational Psychology

10 East Centre Street, Baltimore, Md.

Journal of Educational Sociology

32 Washington Place, New York City.

Journal of Engineering Education

University of Pittsburgh, Pittsburgh, Pa.

Journal of Geography

3333 Elston Ave., Chicago.

Journal of Higher Education

Ohio State University, Columbus, Ohio.

Journal of the National Education Association

1201 Sixteenth Street N.W., Washington, D.C.

Journal of Negro Education

Howard University, Washington, D.C.

Journal of Physical Education

Dayton, Ohio.

Junior College Journal

744 Jackson Place, Washington, D.C.

Library Journal

62 West 45th Street, New York City.

Library Quarterly

5750 Ellis Ave., Chicago.

National Parent Teacher

1201 Sixteenth Street, N.W., Washington, D.C.

National Student Mirror

8 West 40th Street, New York City.

Occupations

551 Fifth Ave., New York City.

Parents' Magazine

52 Vanderbilt Ave., New York City.

Peabody Journal of Education

George Peabody College for Teachers, Nashville, Tenn.

Pitman's Journal

2 West 45th Street, New York City.

Progressive Education

310 West 90th Street, New York City.

Religious Education

59 East Van Buren Street, Chicago.

School Management

52 Vanderbilt Ave., New York City.

COGNATE SOCIETIES AND RESEARCH INSTITUTIONS

School Review

5835 Kimbark Ave., Chicago.

World Federation News

1201 Sixteenth Street, N.W., Washington, D.C.

COGNATE SOCIETIES AND RESEARCH INSTITUTIONS

(For further information, the reader may address the following organizations)

GENERAL

AMERICAN ASSN. FOR ADULT EDUCATION, 60 E. 42nd St., New York City.

AMERICAN COUNCIL ON EDUCATION, 744 Jackson Pl., N.W., Washington, D.C.

AMERICAN COUNCIL OF LEARNED SOCIETIES, 907 15th St., Washington, D.C.

AMERICAN FEDERATION OF TEACHERS, 219 Fifteenth St., Toledo, Ohio.

GENERAL EDUCATION BOARD, 49 W. 49th St., New York City.

BUREAU OF EDUCATIONAL REFERENCE AND RESEARCH, University of Michigan, Ann Arbor, Mich.

NATIONAL CONGRESS OF PARENTS AND TEACHERS, 1201 16th St., N.W., Washington, D.C.

NATIONAL COUNCIL OF EDUCATION, Teachers College, Columbia University, New York City.

NATIONAL EDUCATION ASSN. OF THE U.S.A., 1201 16th St., N.W., Washington, D.C.

NATIONAL RESEARCH COUNCIL, DIVISION OF EDUCATIONAL RELATIONS, 2101 Constitution Ave., N.W., Washington, D.C.

NATIONAL SOCIETY FOR THE STUDY OF EDUCATION, University of Minnesota, Minneapolis, Minn.

PUBLIC EDUCATION ASSN., 745 Fifth Ave., New York City.

INTERNATIONAL

INSTITUTE OF INTERNATIONAL EDUCATION, 2 W. 45th St., New York City.

INTERNATIONAL COUNCIL FOR THE EDUCATION OF EXCEPTIONAL CHILDREN, 3 E. 25th St., Baltimore, Md.

INTERNATIONAL COUNCIL OF RELIGIOUS EDUCATION, 297 Fourth Ave., New York City.

PAN-AMERICAN EDUCATIONAL CONGRESS, Universidad de Chile, Cosilla 2543, Santiago, Chile.

TEACHERS

AMERICAN FEDERATION OF TEACHERS, 219 Fifteenth St., Toledo, Ohio.

CARNEGIE FOUNDATION FOR THE ADVANCEMENT OF TEACHING, 522 Fifth Ave., New York City.

EDUCATORS ASSN., 307 Fifth Ave., New York City.

NATIONAL STUDENT FEDERATION OF AMERICA, 8 W. 40th St., New York City.

STUDENTS INTERNATIONAL UNION, 522 Fifth Ave., New York City.

TEACHERS UNION, 114 E. 16th St., New York City.

SCHOOLS

AMERICAN SCHOOL CITIZENSHIP LEAGUE, 295 Commonwealth Ave., Boston, Mass.

CHILD STUDY ASSN. OF AMERICA, INC., 221 W. 57th St., New York City.

NATIONAL ASSN. OF HIGH SCHOOL SUPERVISORS AND INSPECTORS, State Department of Education, Columbus, Ohio.

NATIONAL ASSN. OF SECONDARY SCHOOL PRINCIPALS, 5835 Kimbark Ave., Chicago, Ill.

NATIONAL KINDERGARTEN ASSN., 8 W. 40th St., New York City.

Y.M.C.A. EDUCATIONAL SECRETARIES ASSN., 55 Hanson Pl., Brooklyn, New York City.

COLLEGES AND UNIVERSITIES

AMERICAN ASSN. OF COLLEGIATE REGISTRARS, George Peabody College for Teachers, Nashville, Tenn.

XXVII. EDUCATION

AMERICAN ASSN. OF JUNIOR COLLEGES,
Little Rock Junior College, Little
Rock, Ark.

AMERICAN ASSN. OF UNIVERSITY PRO-
FESSORS, 744 Jackson Pl., N.W.,
Washington, D.C.

AMERICAN ASSN. OF UNIVERSITY
WOMEN, 1634 I St., N.W., Washing-
ton, D.C.

ASSOCIATION OF AMERICAN COLLEGES,
19 W. 44th St., New York City.

ASSOCIATION OF AMERICAN UNIVERSI-
TIES, Yale University, New Haven,
Conn.

ASSOCIATION OF COLLEGES FOR NEGRO
YOUTH, Fisk University, Nashville,
Tenn.

ASSOCIATION OF LAND GRANT COLLEGES
AND UNIVERSITIES, University of
Kentucky, Lexington, Ky.

COLLEGE ENTRANCE EXAMINATION
BOARD, 431 W. 117th St., New York
City.

NATIONAL ASSN. OF STATE UNIVERSI-
TIES, Miami University, Oxford,
Ohio.

NATIONAL UNIVERSITY EXTENSION
ASSN., Indiana University, Bloom-
ington, Ind.

NEW ENGLAND ASSN. OF COLLEGES AND
SECONDARY SCHOOLS, Tufts College,
Medford, Mass.

PHI BETA KAPPA, 145 W. 55th St.,
New York City.

PROFESSIONAL EDUCATION

AMERICAN ASSN. OF TEACHERS COL-
LEGES, State Normal School, One-
onta, New York.

AMERICAN MEDICAL ASSN., Council on
Medical Education and Hospitals,
535 N. Dearborn St., Chicago, Ill.

ASSOCIATION OF AMERICAN LAW
SCHOOLS, Ohio State University, Co-
lumbus, Ohio.

ASSOCIATION OF AMERICAN MEDICAL
COLLEGES, 5 S. Wabash Ave., Chi-
cago, Ill.

SECTION OF LEGAL EDUCATION, AMER-
ICAN BAR ASSN., 1140 N. Dearborn
St., Chicago, Ill.

SOCIETY FOR THE PROMOTION OF ENGI-
NEERING EDUCATION, University of
Pittsburgh, Pittsburgh, Pa.

SPECIAL EDUCATION

AMERICAN ASSN. TO PROMOTE TEACH-
ING OF SPEECH TO THE DEAF, School
for the Deaf, Staunton, Va.

AMERICAN CHILD HEALTH ASSN., 50
W. 50th St., New York City.

AMERICAN HUMANE EDUCATION SO-
CIETY, 180 Longwood Ave., Boston,
Mass.

AMERICAN PHYSICAL EDUCATION
ASSN., 311 Maynard St., Ann Arbor,
Mich.

NATIONAL ASSN. OF THE DEAF, 3633
E. Tremont Ave., New York City.

VOCATIONAL

AMERICAN ASSN. FOR THE ADVANCE-
MENT OF AGRICULTURAL TEACHING,
Iowa State College, Ames, Ia.

AMERICAN HOME ECONOMICS ASSN.,
Mills Bldg., Washington, D.C.

AMERICAN VOCATIONAL ASSOCIATION,
1010 Vermont Ave., Washington,
D.C.

NATIONAL VOCATIONAL GUIDANCE
ASSN., 25 Lawrence Hall, Harvard
University, Cambridge, Mass.

WORKERS EDUCATIONAL BUREAU OF
AMERICA, Machinists Bldg., Wash-
ington, D.C.

NOTE: For additional educational so-
cieties consult U.S. OFFICE OF EDU-
CATION, Washington, D.C.

NECROLOGY FOR 1941

NECROLOGY FOR 1941

- ADAMS, ALVA B., U. S. Senator (Col.) 66, Dec. 1.
- AGNEW, SIR GEORGE W., British art dealer, 89, Dec. 19.
- ALBERTINI, LUIGI, Italian Senator, 70, Dec. 30.
- ALDRICH, RICHARD S., former Congressman (R.I.) 57, Dec. 25.
- ALEXANDER, MAJ. GEN. ROBERT, 77, Aug. 25.
- ALFONSO XIII, EX-KING OF SPAIN, 54, Feb. 28.
- ALLEN, MRS. MARION BOYD, portrait painter, 79, Dec. 28.
- ANDERSON, SHERWOOD, author, 64, March 8.
- ARMINGTON, F. M., painter and etcher, 65, Sept. 21.
- AUCKLAND, LORD (F. C. G. EDEN), war aviator, 46, April 16.
- AUSTIN, F. B., British author and playwright, 55, March 12.
- AUSTIN, LORD, British automobile manufacturer, 74, May 23.
- BADA, ANGELO, Italian opera singer, 65, March 24.
- BADEN-POWELL, ROBERT, LORD, soldier and Boy Scout promoter, 83, Jan. 8.
- BAER, W. J., painter, 81, Sept. 21.
- BAEZ, CEDILIO, former President of Paraguay, 79, June 18.
- BAGBY, A. M., pianist and concert manager, 81, Feb. 26.
- BANTING, SIR F. G., co-discoverer of insulin, 49, Feb. 21.
- BARBANELL, SOLON, newspaper editor, 81, Nov. 29.
- BARBOUR, ANNA MARY, novelist, May 10.
- BARCLAY, SIR THOMAS, lawyer, 87, Jan. 18.
- BARNARD, EMILE, French painter, 73, April 19.
- BATES, BLANCHE (Mrs. George Creel), actress, 69, Dec. 25.
- BEARD, D. C., Boy Scout leader, 90, June 11.
- BEARD, JAMES T., civil and mining engineer, 86, Dec. 26.
- BELL, ALEX, head of Scotland Yard, 54, July 5.
- BELL, REAR ADMIRAL HEMPHILL, U.S.N., 68, Nov. 11.
- BELL, IRENE PERRY, actress, 75, May 29.
- BENEDICT, MRS. J. H. (MME. BIL-LONI), European opera singer, 84, April 21.
- BENJAMIN, E. S., executive Baron de Hirsch Fund, 79, June 21.
- BERG, E. G., electro-physicist, 70, Sept. 9.
- BERG, HART O., engineer and arms expert, 76, Dec. 9.
- BERGH, LILLIE, singer, 87, July 11.
- BERGSON, HENRI, French philosopher, 81, Jan. 4.
- BERNECKER, LIEUT. GEN. ERICK, German soldier, Oct. 28.
- BERRY, BRIG. GEN. C. W., former N. Y. City controller, April 30.
- BERTRAND, LOUIS, French novelist, 75, Dec. 6.
- BIBESCO, PRINCE GEORGE, Rumanian aviator, 60, July 3.
- BICKEL, G. L., actor, 78, June 5.
- BIJAY CHAND MAHTAB, Hindu Prince of Bengal, 60, Aug. 29.
- BLACKFAN, DR. KENNETH D., pediatrician, 58, Nov. 29.
- BLACKTON, J. S., painter and film producer, 66, Aug. 13.
- BLOCK, PAUL, newspaper publisher, 63, June 22.
- BLUMENTHAL, GEORGE, president of Metropolitan Museum of Art, 83, June 26.
- BOLLES, STEPHEN, Congressman (Wis.) 75, July 8.
- BORGLUM, GUTZON, sculptor, 69, March 6.
- BORISLAVSKY, COL. MICHAEL, Russian torpedo inventor, Feb. 23.
- BOULTON, A. L., educator, 69, April 18.
- BOWERS, L. M., business aide of late J. D. Rockefeller, 94, June 2.
- BOWERS, ROBERT H., composer, 64, Dec. 29.
- BRADSHAW, MRS. KENNETH (Jeanette Despres), actress, 59, May 25.
- BRAISTED, REAR ADMIRAL W. C., U.S.N., 77, Jan. 17.
- BRANDEIS, LOUIS D., former Associate Justice, U. S. Supreme Court, 84, Oct. 5.

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- BREWSTER, BENJAMIN, Episcopal Bishop of Portland, Me., 80, Feb. 2.
- BREWSTER, REV. C. B., retired Episcopal Bishop of Hartford, Conn., 92, April 9.
- BRIDGES, ROBERT, author, 83, Sept. 2.
- BREWSTER, LIEUT. GEN. SIR C. J., British World War (Salonika) commander, 76, Nov. 27.
- BROCKBANK, MRS. MARY, last of Utah Pioneers of 1847, 99, Aug. 18.
- BROOKS, MRS. LOUISE D. D., bacteriologist, 69, Dec. 12.
- BROWER, COL. GERALD, U.S. military and air observer, 47, April 20.
- BRUSH, G. DEF., painter, 85, April 24.
- BRYAN, DR. ROBERT COALTER, surgeon and educator, 68, Dec. 24.
- BRYSON, BRIG. GEN. J. H., American soldier, 65, Nov. 24.
- BUCK, DUDLEY, singer, 71, Jan. 13.
- BUCKNER, E. R., lawyer, 63, March 11.
- BURNETT, E. A., educator, 75, June 28.
- BURNS, W. H., rail executive, 76, May 20.
- BURR, MRS. C. H. (Anna Robeson Brown), novelist, Sept. 10.
- BURTON, MRS. F. H., D.A.R. life director, 80, Aug. 19.
- BUSH, PROF. W. T., philosopher, 74, Feb. 10th.
- BYLES, A. J., president American Petroleum Institute, 60, Sept. 28.
- BYNE, MRS. MILDRED STAPLY, author and authority on Spanish art, 66, Dec. 24.
- BYRAM, H. E., rail executive, 75, Nov. 11.
- BYRON, W. D., Congressman (Md.), 45, Feb. 27.
- CABOT, PROF. PHILIP, economist and teacher, 69, Dec. 25.
- CADMAN, LORD, petroleum owner, 63, May 31.
- CAMERON, HUGH, actor, 62, Nov. 9.
- CAMPBELL, P. P., former Congressman (Kans.) 79, May 26.
- CAMPINCHI, CESAR, former French Minister of Navy, 58, Feb. 23.
- CANDLER, JOHN S., Georgia jurist, 80, Dec. 9.
- CANDLER, REV. W. A., Methodist bishop of Atlanta, Ga., 84, Sept. 25.
- CANNON, ANNIE J., astronomer, 77, April 13.
- CAPERTON, WILLIAM B., Admiral, U.S.N., retired, 86, Dec. 21.
- CARLE, RICHARD, actor, 69, June 28.
- CARTIER, JACQUES, French jeweler, 55, Sept. 10.
- CAULDWELL, L. G., American painter, 79, April 9.
- CEIA, BENVINDO, Portuguese painter, 71, Dec. 5.
- CERDA, P. A., President of Chile, 62, Nov. 25.
- CHAFFEE, MAJ. GEN. A. R., 56, Aug. 22.
- CHAMBERLAIN, COL. H. B., Chicago anti-crime crusader, 74, July 7.
- CHAMBERS, C. E., illustrator, 58, Nov. 5.
- CHARLES, PROF. ROLLIN LANDIS, physicist, 56, Dec. 13.
- CHEVROLET, LOUIS, auto racer and inventor, 62, June 6.
- CHRISTIE, L. C., Canadian Minister to U. S., 56, April 8.
- CLAUSSEN, MME. JULIA, opera singer (Swedish), 62, May 1.
- CLIFFORD, SIR HUGH, British colonial official, 75, Dec. 19.
- COGSWELL, CHARLES NORTHEED, architect, 76, Dec. 5.
- COLER, BIRD S., first City Controller of Greater N. Y., 73, June 12.
- COLLISON, WILSON, playwright, 47, May 24.
- CONDON, KATE, singer, May 27.
- CONE, H. J., REAR ADMIRAL U.S.N., 69, Feb. 12.
- CONN, DR. L. C., Canadian obstetrician and gynecologist, 55, Dec. 22.
- CONNAH, D. J., painter, 70, Aug. 23.
- CONNARY, L. J., Congressman (Mass.), 46, Oct. 19.
- CONNESS, ROBERT, actor, 74, Jan. 15.
- CONQUEST, JOAN, English novelist, 58, Oct. 23.
- CONRAD, DR. FRANK, radio pioneer, 67, Dec. 11.
- COOK, C. E., playwright, 71, June 8.
- COOPER, SIR FRANCIS D., British industrialist, 59, Dec. 18.
- CORDOVA, RUDOLPH DE, English actor and dramatist, 81, Jan. 11.
- CORNEJO, ABRAHAM, Argentine public official, 67, Dec. 1.
- COURTNEY, FAY (Mrs. R. V. Mac-Nicol), actress, 45, Feb. 14.
- COX, WALTER R., race trainer and driver, 72, Dec. 15.

NECROLOGY FOR 1941

- COYNE, JOSEPH, actor, 73, Feb. 20.
- CRAWFORD, ROBERT, theatrical producer, 52, Sept. 20.
- CREELMAN, JAMES, scenario writer, Sept. 9.
- CSAKY, COUNT STEPHEN, Hungarian Foreign Minister, 43, Jan. 27.
- CUDAHY, E. A. SR., Chicago meat packer, 81, Oct. 18.
- CUNNINGHAM, FRANK S., merchant and philanthropist, 75, Dec. 1.
- CURRAN, MRS. HUGH G. (Pearl Gildersleeve), song writer, 65, April 16.
- CURTIN, DR. WILLIAM A., physician and teacher, 79, Dec. 5.
- CUSHING, C. C., playwright, 62, March 6.
- DANFORTH (DANIELS) WILLIAM, Gilbert & Sullivan opera singer, 73, April 16.
- DAUGHERTY, H. M., former U. S. Attorney General, 81, Oct. 12.
- DAVAZ, SUAD, Turkish Ambassador, 63, Aug. 22.
- DAVENPORT, DR. WILLIAM, Tennessee poet laureate, 74, May 11.
- DAVIES, SIR WALFORD, Master of the King's Music, 71, March 11.
- DECKER, KARL, newspaper correspondent, 73, Dec. 3.
- DERRICK, W. R., painter, 83, Jan. 9.
- DINSMORE, REV. and Prof. C. A., author, 80, Aug. 14.
- DOLLY, JENNIE (Janszicka Deutsch, Mrs. Irving Netcher), dancer, 48, June 1.
- DOUGLAS, W. J., former Governor of Canal Zone, 68, July 2.
- DRAKE, J. W., former Assistant Secretary of Commerce, 66, Nov. 27.
- DRIESCH, PROF. H. A. D., German biologist, 73, April 17.
- DRURY, JOHN, actor, 70, Oct. 11.
- DUFFIELD, REV. HOWARD, Presbyterian clergyman, 85, Jan. 5.
- DUFFY, DR. JAMES J., cancer specialist, 49, Dec. 13.
- DUNCAN, W. J., illustrator, 60, April 11.
- DUNGAN, P. B., REAR ADMIRAL U.S.N., 64, Nov. 26.
- DUPUY, W. A., newspaperman, 65, Aug. 11.
- DURFEE, DR. WILLIAM P., educator, mathematician, 86, Dec. 17.
- DYER, F. L., inventor, 70, June 4.
- EDELSTEIN, M. M., Congressman (N. Y.), 53, June 4.
- EDWARDS, REV. JOHN H., clergyman, 87, Dec. 1.
- EILSHEMIUS, LOUIS, artist, 77, Dec. 29.
- ELLIOTT, J. C., Canadian Senator, 69, Dec. 20.
- ELTINGE, JULIAN, actor, 57, March 7.
- EMERSON, V. L., inventor, 78, May 6.
- EMMERSON, L. L., former Governor of Illinois, 77, Feb. 4.
- ENDOR, CHICK (Charles Knapton, Jr.), entertainer, 47, Sept. 1.
- ERROLL, EARL OF, Lord High Constable of Scotland, 39, Jan. 23.
- ESCH, JOHN J., former Congressman (Wis.), 80, April 27.
- ESCOFFIER, PAUL, French actor, July 30.
- ESSEX, VIOLET (Mrs. C. L. Tucker), actress, 48, Jan. 31.
- EVANS, BRIG. GEN. F. E., 65, Nov. 25.
- FAIRBROTHER, SYDNEY, British actress, 68, Jan. 3.
- FALCONER, MRS. M. P., prison reformer, 79, Nov. 26.
- FEWKES, VLADIMIR, anthropologist and archaeologist, 40, Dec. 11.
- FIELDS, LEW, actor, 74, July 20.
- FIELDS, STANLEY (Walter Agnew), actor, 57, April 23.
- FINLEY, CHARLES, former Congressman (Ky.), 75, March 19.
- FISHER, C. S., American archaeologist, 61, July 20.
- FISHER, F. J., automobile body manufacturer, 63, July 14.
- FISHER, H. F., former Congressman (Tenn.), 63, June 16.
- FITZGERALD, CISSY, British actress, May 10.
- FITZGIBBONS, JOHN, former Congressman (N.Y.), 73, Aug. 4.
- FLINT, SETH, sounded the bugle call at Appomattox, Va. that marked the end of the Civil War, 93, March 18.
- FLYNN, W. J., Bronx Dem. leader, 62, Nov. 27.
- FORD, MRS. H. C. (Blanche Chapman), actress, 91, June 7.
- FORD, W. C., author, 83, March 7.
- FORSYTH, CECIL, composer and author, 71, Dec. 7.
- FOSTER, PROF. R. C., president Alabama University, 46, Nov. 19.

NECROLOGY FOR 1941

- FRAZER, SIR J. B., British anthropologist, 87, May 7.
- FREW, W. E., banker, 76, May 19.
- GARDINER, REV. T. M., P. E. Suffragan Bishop of Liberia, 71, April 3.
- GARLAND, LEON, artist, 45, Nov. 27.
- GEHRIG, LOU, former captain of the N. Y. Yankees baseball team, 37, June 2.
- GETTY, BRIG. GEN. R. N., 86, April 15.
- GEYER, L. E., Congressman (Calif.), 53, Oct. 11.
- GHERARDI, BANCROFT, electrical engineer, 68, Aug. 14.
- GIBBS, R. P., actor, 81, Feb. 22.
- GILESPIE, DR. WALTER H., Latin scholar and teacher, 69, Nov. 30.
- GILLET, MAJ. GEN. R. H., N. Y. National Guard, 63, Jan. 16.
- GIRARD, MRS. EDWARD (Jessie Gardner), actress, 68, Jan. 27.
- GOELET, R. W., financier, 61, May 2.
- GOLDMARK, SUSAN, poet, 78, Sept. 23.
- GOODRICH, ARTHUR F., playwright, 63, June 26.
- GORDON, JAMES, actor, 70, May 12.
- GRADY, J. H., actor, 70, Feb. 17.
- GRAHAM, H. F., former Governor of Vt., 79, Nov. 23.
- GRANT, MRS. E. J. (Jeannie Dailey), singer, 84, June 7.
- GRASER, E. W. (Lone Ranger), radio actor, 32, April 8.
- GRAUSTEIN, PROF. W. C., mathematician, 52, Jan. 22.
- GREENE, W. D., actor, 68, Feb. 20.
- GREENOUGH, CARROLL, architect, 58, Aug. 18.
- GREGORY, DR. MENAS S., psychiatrist, 64, Nov. 2.
- GREY, CLIFFORD, British lyric writer, 54, Sept. 26.
- GRINDELL-MATTHEWS, HARRY, British "death ray" inventor, 61, Sept. 17.
- GROSSMAN, HELEN, actress, 42, May 29.
- GRUBER, REV. DR. L. FRANKLIN, Lutheran educator, 70, Dec. 5.
- GUGGENHEIM, SIMON, former U. S. Senator (Col.), 73, Nov. 2.
- GUGGENHEIM, WILLIAM, financier, 72, June 27.
- GUGLIELMINETTI, AMALIA, Italian writer, 60, Dec. 4.
- GUNTHER, FRANKLIN MOTT, U. S. Minister to Rumania, 56, Dec. 22.
- HADING, JANE (Jeanen A. Trefouet), French actress, 81, Feb. 18.
- HAMILL, JAMES A., former Congressman (N.J.), 64, Dec. 15.
- HANUS, DR. PAUL, educator, 86, Dec. 14.
- HARPER, LILLIE H., sculptor, 60, Sept. 22.
- HARRIS, S. H., play producer, 69, July 3.
- HARRISON, B. P. (Pat), U. S. Senator (Miss.), 59, June 22.
- HAVILAND-TAYLOR, Katherine, playwright and novelist, Nov. 28.
- HAWKE, SIR J. A., British jurist, Oct. 29.
- HAWKS, WELLS, theatre publicity man, 71, Dec. 4.
- HAWLEY, H. D., actor, 62, March 29.
- HAWLEY, W. C., former Congressman (Ore.), 77, July 24.
- HAYES, SIR B. F., White Star Commodore, 76, May 15.
- HEAD, REV. FREDERICK W., Anglican Archbishop of Melbourne, 67, Dec. 18.
- HEARST, SIR WILLIAM, former Ontario Premier, 77, Sept. 29.
- HECKSCHER, AUGUST, financier, 92, April 26.
- HEIDEL, PROF. WILLIAM A., Greek scholar, 72, Jan. 15.
- HENRY, JULES, French Ambassador to Turkey, 52, June 10.
- HEYDT, DR. H. A., poet and lawyer, 72, Aug. 4.
- HIGGINS, F. R., Irish poet, 44, Jan. 8.
- HIGGINS, BRIG. GEN. W. A., 63, Nov. 18.
- HIGGINSON, MRS. T. W. (Mary Thatcher), poet and author, 96, Jan. 9.
- HILL, GENERAL J. P., former Congressman (Md.) 62, May 23.
- HILL, R. T., geologist, 82, July 28.
- HINCKLEY, ROBERT, painter, 88, June 1.
- HINDS, MAJOR GENERAL ERNEST, 76, June 17.
- HOLLOWAY, CHARLES, painter, 81, Jan. 27.
- HOLT, SIR H. S., railway builder, 85, Sept. 28.
- HORGAN, S. H., inventor, 87, Aug. 30.
- HORNE, THOMAS K. B., author and publisher, 76, Nov. 30.
- HOUGHTON, A. B., former U. S. Am-

NECROLOGY FOR 1941

- bassador to Germany and to Britain, 78, Sept. 16.
- HOUSTON, A. J., U. S. Senator (Texas), 87, June 26.
- HOWARD, HARRY, actor, 75, March 13.
- HOWLAND-SHEARMAN, DR. CHARLES H., inventor and metals expert, 75, Dec. 14.
- HOXIE, C. A., electrical inventor, 74, Oct. 13.
- HUDSPETH, C. B., former Congressman (Texas), 64, March 19.
- HUMPHREY, MRS. W. B. (Marie Ives) President of American Indian League, 83, March 29.
- HUMPHREYS, BRIG. GEN. F. E., first army aviator, 57, Jan. 20.
- HUNT, MAJOR C. V. D., sculptor, 79, Feb. 1.
- HUNTZIGER, GEN. C. L. C., French Minister of War, 61, Nov. 12.
- HUTCHINSON, REV. DR. BENNETT, W., clergyman and educator, 82, Nov. 29.
- HYMANS, PAUL, former Belgian Foreign Minister, 75, March 9.
- INGERSOLL, GENEVRA, actress, 81, Jan. 17.
- ISAACS, DR. NATHAN, educator, 55, Dec. 18.
- ISRAEL, REV. E. L., Jewish leader, 45, Oct. 19.
- JACKSON, REV. DR. FREDERICK J. J., theologian, 86, Dec. 1.
- JALKANEN, KALLE, champion Finn skier, Sept. 5.
- JAMES, A. C., financier industrialist, 74, June 4.
- JARVINEN, KALLE, champion Finn shotputter, Sept. 5.
- JENSEN, ANDREW, Mormon historian, 90, Nov. 18th.
- JOFFE, M. S., painter, 76, June 28.
- JOHNSON, AMY, British aviatrix, 32, Jan. 5.
- JOHNSON, H. E., song writer, 53, May 1.
- JOHNSON, DR. LOREN B. T., psychiatrist, 66, Dec. 14.
- JOYCE, JAMES, Irish novelist, 58, Jan. 13.
- KASTAR, REV. KARL, R. C. Cardinal, Archbishop of Prague, 70, April 21.
- KEAN, HAMILTON FISH, former U. S. Senator (N.J.), 79, Dec. 27.
- KEENE, F. P., polo player, Sept. 25.
- KEITH, MRS. BOUDINOT (Dora Wheeler), artist, 85, Dec. 27.
- KELLEY, MARY (Mrs. Ray Myers) actress, 47, June 7.
- KENMARE, EARL OF, 80, Nov. 14.
- KENNEDY, S. M., actor, 79, Oct. 28.
- KERRL, DR. HANS, German Minister of Religious Affairs, 54, Dec. 14.
- KETCHAM, JOHN C., former Congressman (Mich.), 68, Dec. 4.
- KETCHUM, MRS. (Mother) Millimento W., Philadelphia social worker, 81, Dec. 2.
- KEYES, MARGARET, opera singer, Jan. 6.
- KIENZI, WILHELM, composer, 84, Oct. 3.
- KILMER, MRS. JOYCE (Aline Murray) poet, 53, Oct. 1.
- KING, MAJOR C. S., actor, 67, Sept. 18.
- KITTREDGE, PROF. G. L., Harvard Shakespeare scholar, 81, July 23.
- KNAPP, MISS FRANCES L., Wellesley dean, 61, July 31.
- KOLB-DANVIN, MRS. C. L. (Princess Radziwill), 84, writer, May 11.
- KORIZIS, ALEXANDER, Greek Premier, 56, April 19.
- KRAMER, EDWARD A., landscape artist, 75, Dec. 28.
- KRIEBEL, HERMANN, member of German World War Armistice Commission, 65, Feb. 17.
- KUBELIK, JAN., violinist, 60, Dec. 5.
- LADD, REV. W. P., dean of Berkeley Divinity School, 71, July 1.
- LAFFOON, RUBY, former Governor (Ky.), 72, March 1.
- LAMBERTON, R. E., Mayor of Philadelphia, 54, Aug. 22.
- LANDER, FRANK, actor, 80, Jan. 10.
- LANE, GERTRUDE B., magazine editor, Sept. 25.
- LANGMUIR, DR. A. C., chemist, 69, May 14.
- LANING, HARRIS, Rear Admiral, 67, Feb. 2.
- LANMAN, PROF. C. R., Orientalist, 90, Feb. 20.
- LAPORTE, ERNEST, Canadian Minister of Justice, 65, Nov. 26.
- LASKER, EMANUEL, chess expert, 72, Jan. 11.
- LAUGHLIN, CLARA E., novelist, 67, March 3.
- LAUGHLIN, IRWIN, former Ambassador to Spain, 70, April 18.

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- LAURI, REV. LORENZO, R. C. Cardinal, 76, Oct. 8.
- LAVERY, SIR JOHN, painter, 84, Jan. 10.
- LAW, MRS. FANNIE, actress, 70, April 17.
- LAWTON, W. C., educator, 88, April 18.
- LEBLANC, MAURICE, novelist, 76, Nov. 6.
- LEDoux, U. J. (Mrs. Zero) friend of the poor, 66, April 8.
- LEE, MISS AURIOL, actress, July 2.
- LEES-SMITH, H. B., British laborite. 63, Dec. 18.
- LEGGE, R. H., painter and illustrator. 59, Dec. 9.
- LEIBOWITZ, DAVID, rabbi and educator, 54, Dec. 5.
- LEICESTER, EARL OF, soldier, 98, Nov. 19.
- LENNOX, MISS JANE, actress, 72, Aug. 30.
- LEONARD, EDDIE (Lemuel Gordon Toney) minstrel, 65, July 25.
- LEVINSON, S. O., lawyer, 75, Feb. 2.
- LEVITSKI, MISCHA, pianist, 42, Jan. 2.
- LEWIS, PROF. D. D., surgeon, 67, Oct. 9.
- LEWIS, MARY, singer, 41, Dec. 31.
- LIEBLER, T. A., theatrical producer, 89, April 23.
- LLEWELLYN, SIR WILLIAM, English painter, 77, Jan. 28.
- LLOYD, MRS. ELIZABETH F., painter, 71, Aug. 17.
- LLOYD GEORGE, DAME MARGARET, 77, Jan. 20.
- LONGSTAFF, SIR JOHN, Australian painter, 79, Oct. 1.
- LORIMER, MRS. G. H. (Alma Ennis) civic leader, 64, Jan. 19.
- LOUDERBACK, HAROLD, Federal judge, 60, Dec. 11.
- LOVELL, FREDERICK A., geologist and mining engineer, 102, Dec. 13.
- LOWY, DR. ALEXANDER, authority in organic chemistry, 52, Dec. 25.
- LUCE, REV. DR. HENRY W., educator and missionary, 73, Dec. 7.
- LUCKSTONE, ISADORE, pianist, composer, 80, March 12.
- LUPKIN, A. M., U. S. Senator (S.C.), 54, Aug. 1.
- LYNDE, SANDRA (Dorothy Fox) actress, 32, May 10.
- MACDONALD, MRS. CARDELIA FOX HOWARD, actress, 93, Aug. 8.
- MACDONELL, LIEUT. GEN. SIR ARCHIBALD C., Canadian soldier, 77, Dec. 23.
- MACDOWELL, W. M., actor, 84, Feb. 19.
- MACK, W. H. (McIlvaine), actor, 81, Sept. 23.
- MACK, WILLIAM, legal editor, 76, Dec. 10.
- MAIER, WILLIAM J., former N. Y. State Controller, 65, Dec. 15.
- MAIR, DAME SARAH, granddaughter of Mrs. Siddons, actress, 94, Feb. 17.
- MALLORY, C. D., ship operator, 59, April 8.
- MANKIEWICZ, DR. FRANK, educator, 69, Dec. 2.
- MANN, TOM, English labor leader, 84, March 13.
- MARCHAND, J. H., French painter, 58, Oct. 10.
- MARGERY (Mrs. Le Roi G. Crandon), spiritualist medium, about 50, Nov. 1.
- MARLAND, E. W., former Governor (Okla.), 67, Oct. 3.
- MARMOUD, MOHAMMED, Minister of Defense of Egypt, former Premier, 58, Feb. 1.
- MARTINEZ-NADAL, RAFAEL, former Senator of Puerto Rico, 63, July 6.
- MARVELL, REAR ADMIRAL G. R., 72, Nov. 12.
- MASON, J. W. T., war correspondent, 62, May 13.
- MASSINGALE, SAM, Congressman (Okla.), 70, Jan. 17.
- MATHEWS, REV. PROF. SHAILER, theologian, 78, Oct. 23.
- MAVROGORDATE, T. M., English tennis star, 58, Aug. 27.
- MAYALL, HERSHELL, actor, 78, June 10.
- MAYBRICK, MRS. FLORENCE (Florence Chandler) widow of James Maybrick, Liverpool cotton broker, 80, Oct. 23.
- McAdoo, W. G., former Secretary of Treasury and former U. S. Senator (Calif.) 77, Feb. 1.
- MCCAIN, MAJOR GEN. H. P., 80, July 25.
- MCCORMICK, H. F., manufacturer, 69, Oct. 16.

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- McCORMICK, W. G., banker, 90, Nov. 29.
- McCUNE, REV. DR. GEORGE S., clergyman and Orientalist, 68, Dec. 5.
- McFETRIDGE, LAURA, social worker and war nurse, 55, Dec. 7.
- McKENZIE, J. C., former Congressman (Ill.), 81, Sept. 17.
- McKINLEY, MAJOR GEN. J. F., 60, Jan. 17.
- McLEAN, E. B., newspaper owner, 58, July 27.
- MEAD, REV. C. L., Methodist bishop, 71, May 17.
- MEAD, MRS. D. W. (Mary Robbins), New Thought leader, Feb. 28.
- MEHL, DR. WILLIAM M., eye specialist, 64, Nov. 28.
- MENOCAL, GEN. M. K., former President of Cuba, 74, Sept. 7.
- MEREJKOWSKI, DIMITRI, Russian novelist and philosopher, 76, Dec. 9.
- METAXAS, GEN. JOHN, Greek Premier, 70, Jan. 29.
- MILLER, KELTON B., newspaper publisher, 81, Dec. 2.
- MILLION, MRS. HELEN L. L., educator, 76, Dec. 4.
- MINER, E. H., animal painter, 59, Oct. 10.
- MONTAGUE, JAMES J., newspaperman, 68, Dec. 16.
- MOORE, R. W., U. S. State Dept. Counselor, 81, Feb. 8.
- MORGAN, HELEN, (Mrs. Lloyd Johnson), singer, 41, Oct. 8.
- MORGAN, MAUD, harpist, 81, Dec. 2.
- MORRISON, LEE, actor, 65, March 30.
- MORRISSEY, J. F., actor, 59, Oct. 7.
- MORTON, J. G., actor, 84, Sept. 25.
- MOSHER, REV. G. F., Protestant Epis. bishop (N.Y.), 69, July 19.
- MOURE, DR. JEAN, French laryngologist, Dec. 2.
- MUIR, RAMSAY, author, 69, May 4.
- MUNGER, T. C., Federal jurist, 80, Nov. 29.
- MURRAY, CHARLIE, actor, 69, July 29.
- MURRAY, SAMUEL, sculptor, 71, Nov. 3.
- MUSSOLINI, CAPT. BRUNO, aviator, son of Italian premier, 23, Aug. 7.
- MYERS, REV. DR. CORTLAND, clergyman and evangelist, 77, Dec. 26.
- NAON, DR. ROMULO, S., Argentine diplomat, 66, Dec. 30.
- NARELLE, MME. MARIE, Australian singer, 70, Jan. 28.
- NATALIE, former Queen of Serbia, widow of former King Milan Obrenovich, 82, May 8.
- NEGREPONTE, MME. MICHEL, granddaughter of Victor Hugo, Nov. 30.
- NEERNST, W. H., inventor, 77, Nov. 18.
- NEVINSON, H. W., war correspondent, 85, Nov. 9.
- NEWCASTLE, DUKE OF, 75, April 21.
- NEWTON, W. H., former Congressman (Minn.), 60, Aug. 10.
- NICE, H. W., former Governor of Maryland, 63, Feb. 25.
- NICHOLS, A. D., painter, 66, Nov. 13.
- NOLLET, GEN. EDOUARD, former French Minister of War, 76, Jan. 29.
- NORTON, DR. THOMAS H., chemist and educator, 90, Dec. 2.
- OBARRIO, GEN. N. A. de, founder of Panama Republic, 67, Jan. 16.
- O'CONNELL, JOHN M., former Congressman (R.I.), 69, Dec. 6.
- O'CONNOR, ANDREW, American sculptor, 67, June 11.
- OHL, REV. JEREMIAH, Lutheran educator, 90, Jan. 21.
- OMAN, JOSEPH W., U. S. Rear Admiral, 76, July 1.
- O'LOGHLEN, CLEMENT, actor, 40, May 2.
- OSBORN, ESTHER (Mrs. E. O. Nelson), singer, 62, Aug. 29.
- OXENHAM, JOHN (W. A. Dunkerley), author, Jan. 24.
- PADEREWSKI, I. J., former Premier of Poland, pianist, 80, June 29.
- PADEREWSKI-WILKONSKA, MME. ANTONINA, sister of late Polish pianist, 83, Oct. 6.
- PALMER, J. L., English painter of horses, 76, June 22.
- PAPI, GENNARO, Metropolitan opera conductor, 53, Nov. 29.
- PARDEE, DR. G. C., former Governor (Calif.) 84, Sept. 1.
- PARKE, WILLIAM, actor, 68, July 28.
- PARSONS, DR. ELSIE CLEWS, ethnologist, 66, Dec. 19.
- PAXTON, W. McG., painter, 72, May 13.
- PEASE, DR. C. G., anti-tobacco crusader, 86, Oct. 7.
- PENN, A. A., composer, 65, Feb. 6.
- PENNER, JOE (Josef Pinter) actor, 36, Jan. 10.
- PEOPLES, C. J., REAR ADMIRAL U. S. N., 64, Feb. 3.

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- PERKINS, MISS EMILY S., hymn composer, 75, June 27.
- PERRY, R. H., sculptor, 71, Oct. 27.
- PETERS, DR. LEROY, tuberculosis specialist, 59, Dec. 17.
- PETERSON, C. O., Byrd antarctic explorer, 44, Nov. 10.
- PHELAN, M. F., former Congressman (Mass.), 66, Oct. 12.
- PHILLIPS, SIR TOM S. V., British admiral, 53, Dec. 10.
- PICARD, EMIL, French mathematician, 85, Dec. 12.
- PITMAN, RICHARD, actor, 67, Nov. 13.
- PLASKETT, J. S., astronomer, Oct. 17.
- POCOCK, CAPT. ROGER, traveler and English author, 76, Nov. 12.
- POURTALES, COUNT GUY de, Swiss novelist, 57, June 13.
- PREVOST, MARCEL, French novelist and playwright, 78, April 8.
- PRICE, MRS. CLARA BABBIT, actress, 85, Feb. 1.
- QUIDDE, LUDWIG, Nobel Peace Prize 1927, 82, March 4.
- RAND, ELLEN EMMET, portrait painter, 65, Dec. 18.
- RANSLEY, H. C., former Congressman (Pa.), 78, Nov. 5.
- RATHBONE, JOSEPHINE A., former president American Library Assn., 75, May 17.
- RAYNER, MINNIE, English actress, 72, Dec. 13.
- RENNELL, FIRST BARON (J. Rennell Rodd), British diplomat, 82, July 27.
- REUTER, GABRIELE, German novelist, 82, Nov. 15.
- REVERMAN, REV. T. H., Roman Catholic bishop, July 18.
- REYES, JUAN, pianist, Jan. 21.
- RIBEIRO, MANUEL, Portuguese novelist, 62, Nov. 28.
- RICE, DR. JOHN P., educator, 62, Dec. 24.
- RICHARDS, J. G., former Governor (S. C.), 77, Oct. 9.
- RIDDLE, JOHN WALLACE, former U. S. Ambassador to Russia, 77, Dec. 8.
- RIDGE, LOLA (Mrs. David Lawson), poet, 57, May 19.
- RIEGELMANN, EDWARD, jurist, 71, Jan. 15.
- RIKER, VINCENT J., N. Y. harbor pilot, 52, Dec. 15.
- RIPLEY, W. Z., Harvard economist, 73, Aug. 16.
- RIPPLE, PACIE, opera singer, April 16.
- ROBERTS, ELIZABETH MADDOX, poet, 55, March 13.
- ROBERTSON, W. H. ("Sparrow"), *Paris Herald* sport columnist, 83, June 10.
- ROBINSON, F. B., former president College of the City of New York, 58, Oct. 19.
- ROBINSON, MARGARET A., actress, 73, March 27.
- RODRIGUEZ, J. L., a promoter of Centro-American Union, 111, Sept. 12.
- ROGERS, PROF. R. E., language expert, 53, May 13.
- ROLLET, GEN. PAUL, French Foreign Legion, 72, April 16.
- ROOSEVELT, G. H., brother of Mrs. F. D. Roosevelt, consulting engineer, 50, Sept. 25.
- ROOSEVELT, MRS. JAMES (Sara Delano), mother of President F. D. Roosevelt, 86, Sept. 7.
- ROURKE, CONSTANCE M., author, 55, March 23.
- ROWELL, N. W., former Chief Justice of Ontario, 74, Nov. 22.
- RUSSELL, COUNTESS ("Elizabeth"), novelist, 74, April 9.
- SABATIER, PAUL, French scientist, 86, Aug. 14.
- SACKETT, F. M., former Ambassador to Germany and former U. S. Senator (Ky.), 72, May 18.
- ST. JUST, LORD (E. C. Grenfell), English banker, 71, Nov. 26.
- SANBORN, J. PITTS, music critic, 61, March 7.
- SANDERS, A. D., former Congressman (N. Y.), 84, July 15.
- SAUNDERS, PEGGY (Mrs. L. R. C. Michell), English tennis player, 36, June 21.
- SAXON, MARIE (Mrs. Sidney Silverman), actress, 37, Nov. 12.
- SCHERMERHORN, JAMES, newspaper publisher, 76, Dec. 2.
- SCHERTZINGER, VICTOR, song writer, 52, Oct. 26.
- SCHUELKE, ERIC, inventor, 51, Jan. 28.
- SCHULTE, KARL, Roman Catholic archbishop of Cologne, 69, March 11.
- SCHWERT, P. L., Congressman (N.Y.), 48, March 11.

NECROLOGY FOR 1941

- SECOR, A. J., art collector, 83, July 27.
- SEE, ALONZO B., elevator manufacturer, 94, Dec. 16.
- SEWALL, W. G., rubber grower, 67, July 14.
- SHANNON, PEGGY, actress, 31, May 11.
- SHELTON, D. O., founder National Bible Institute, 73, Jan. 29.
- SHEPPARD, MORRIS, U. S. Senator (Texas), 65, April 9.
- SHERLEY, SWAGER, former Congressman (Ky.), 69, Feb. 13.
- SHERMAN, CAPT. JAMES H., whaling captain, 98, Dec. 22.
- SIKES, E. W., educator, author, 72, Jan. 8.
- SIMPSON, KENNETH F., Congressman (N.Y.), 45, Jan. 25.
- SINDING, CHRISTIAN, Norwegian composer, 85, Dec. 3.
- SKILTON, C. S., composer, 72, March 12.
- SMITH, HAMILTON, movie novelist, 54, Oct. 29.
- SMITH, PROF. PRESERVED, historian, 60, May 15.
- SMITH, MAJOR GENERAL W. R., 73, July 15.
- SMOOT, REED, U. S. Senator (Utah), 79, Feb. 9.
- SNOWDEN, MRS. JOANNA, Negro social leader, 72, Oct. 11.
- SOBERANCES, PEARL (Mrs. G. E. Linn), singer, 65, Feb. 22.
- SOUTHEK, EARL OF, antiquarian, 87, Nov. 10.
- SPEYER, JAMES, banker, 80, Oct. 31.
- STAMP, JOSIAH, FIRST BARON, English financier and economist, 60, April 16.
- STEARLY, REV. W. R., Protestant Episcopal Church bishop, 72, Nov. 8.
- STEEL, WILLIS, playwright, critic, 75, Jan. 31.
- STELZLE, REV. CHARLES, Labor Temple founder, 72, Feb. 27.
- STEPHENSON, JAMES, actor, 41, July 29.
- STERN, LOUIS, actor, 81, Feb. 15.
- STEVENS, LANDERS, actor, 63, Dec. 19, 1940.
- STEWART, W. G., actor, 72, July 16.
- STILES, DR. C. W., hookworm discoverer, 73, Jan. 24.
- STILL, SIR FREDERIC, physician to the King, June 30.
- STOLZ, REV. JOSEPH, dean of Reformed Rabbis in U. S., 79, Feb. 7.
- STONE, DR. H. M. (Hannah Mayer), birth control pioneer, 47, July 10.
- STONEHAVEN, VISCOUNT (J. L. Baird), former Governor General of Australia, 67, Aug. 20.
- STRAWBRIDGE, ANNA W., painter, 58, Sept. 9.
- STRONG, L. A., U. S. Government entomologist, 54, June 2.
- STROOCK, S. M., New York lawyer, 67, Sept. 11.
- STUART, PROF. D. R., Latin scholar, 67, Aug. 29.
- STUART, J. E., painter, 88, Jan. 1.
- SUFFOLK, EARL OF, 35, May 12.
- SULZER, WILLIAM, former Governor and former Congressman (N.Y.), 78, Nov. 6.
- SYDELL, ROSE (Mrs. W. S. Campbell), actress, 76, Aug. 4.
- SYMMONDS, BRIG. GEN. C. J., 74, July 16.
- TAGORE, SIR RABINDRANATH, poet, 80, Aug. 7.
- TAYLOR, E. T., former Congressman (Col.), 73, Sept. 3.
- TAYLOR, H. O., historian, 84, April 13.
- TELEKI, COUNT PAUL, Premier of Hungary, 61, April 3.
- THOMAS, DR. WILLIAM S., allergy authority and author, 70, Dec. 21.
- THOMPSON, CHARLES MINER, author and editor, 77, Dec. 19.
- THOMPSON, PROF. R. C., English archaeologist, 64, May 25.
- TILLSON, COL. JOHN C. F., soldier, 85, Dec. 16.
- TIMBERLAKE, C. B., former Congressman (Col.), 86, May 31.
- TITULESCUE, NICHOLAS, former Foreign Minister of Rumania, 67, March 17.
- TODD, H. S., painter, 69, April 21.
- TORLONIA, PRINCESS (Elsie Moore), 53, Dec. 21.
- TOWNSEND, H. E., painter, 61, Aug. 25.
- TRAUTMANN, MRS. RALPH, leader in health protective work, Aug. 18.
- TREANON, W. E., Federal judge, 57, April 26.
- TREAT, MAJ. GEN. C. G., 81, Oct. 11.
- TREMAINE, M. S., New York State Controller, 70, Oct. 12.
- UDET, COL. GEN. ERNST, German flying war ace, 45, Nov. 17.

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- ULRICH, C. K., playwright, 82, July 5.
- UPDIKE, DANIEL B., founder of Merry-mount Press, 81, Dec. 29.
- USSISHKIN, M. M., Zionist leader, 78, Oct. 2.
- VAN DEVANTER, WILLIS, former associate justice U. S. Supreme Court, 81, Feb. 8.
- VAN GELDER, MARTINUS, painter, 87, Feb. 26.
- VAN HORN, BRIG. GEN. R. O., World War commander, 64, June 26.
- VENTURI, PROF. ADOLFO, Italian art historian, 84, June 9.
- VERAGUA, DUKE OF (Ramon Colon Carvajal), descendant of Columbus, Jan. 24.
- VERNON, GRENVILLE, journalist and author, 58, Nov. 30.
- VERONA, JANE (Mrs. J. P. English), actress, 55, July 19.
- VINCENT, G. E., educator, 76, Feb. 1.
- VITELLI, MRS. FRANCESCO, social worker, 62, Dec. 7.
- WAKEFIELD, VISCOUNT, former Lord Mayor of London, 81, Jan. 15.
- WALKER, STUART, actor, 53, March 13.
- WALLACE, CAPT. EUAN, former Minister of Transport, 48, Feb. 9.
- WALPOLE, SIR HUGH, English novelist, 57, June 1.
- WALTER, EUGENE, playwright, 64, Sept. 26.
- WALTER, WILMER, actor, 57, Aug. 23.
- WARREN, MARY C., educator, 103, May 17.
- WASON, E. H., former Congressman (N.H.), 75, Feb. 6.
- WATKINS, REV. A. S., Prohibition candidate for president in 1920, 77, Feb. 10.
- WEE, OSCAR E., theatrical producer, 60, Dec. 10.
- WELDON, ELIZABETH, actress, 70, Aug. 21.
- WELLINGTON, FIFTH DUKE OF, 65, Dec. 11.
- WELLS, R. S., Mormon leader, 86, May 7.
- WELSH, HERBERT, artist, 89, June 28.
- WEXLER, JACOB, actor, 58, Jan. 16.
- WHITE, A. B., former Governor (W.Va.), 84, July 3.
- WHITE, TRUMBULL, editor, author and explorer, 73, Dec. 13.
- WHITNEY, MRS. CASPER, civic leader, 62, July 2.
- WHITNEY, MRS. G. E., novelist, 80, May 22.
- WHORF, B. L., Aztec culture expert, 44, July 26.
- WICK, FRANCES G., cold-light expert, 65, June 15.
- WILHELM II, former German Kaiser and King of Prussia, 82, June 4.
- WILKINS, BRIG. GEN. H. E., 80, Aug. 15.
- WILLIAMS, CRAIG, actor, 64, July 4.
- WILLIAMS, J. D., theatrical producer, March 22.
- WILLIAMS, W. T. B., Tuskegee vice president, 74, March 26.
- WILLINGDON, MARQUESS OF (F. Freeman-Thomas) former Governor General of Canada, 74, Aug. 12.
- WINN, MAJOR GENERAL F. L., 76, Feb. 24.
- WITTIG, EDWARD, Polish sculptor, 64, Nov. 28.
- WORTHINGTON, W. J., actor, 69, April 9.
- WRIGHT, HUNTLEY, actor, 71, July 10.
- YORKNEY, J. C., actor, 70, Aug. 20.
- YOST, C. S., newspaper editor, 77, May 30.
- YOUNG, ROSE, feminist, author, July 6.
- YUKSELEN, MEHMET ALI, Turkish Consul General, 51, Sept. 20.
- ZAHLE, HERLUF, Danish Minister to Berlin, 68, May 4.

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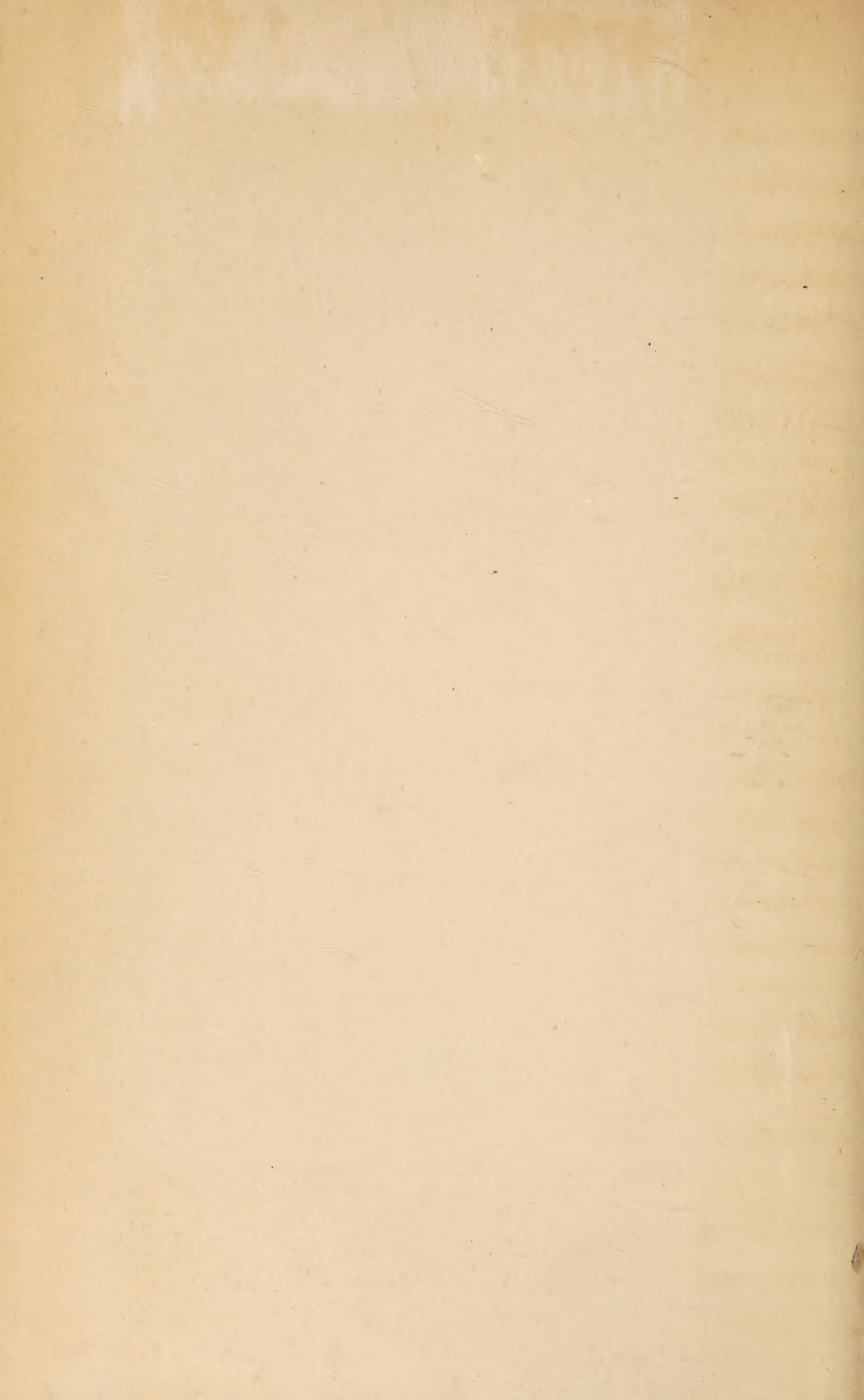
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